Home Computing WEEKLY

An Argus Specialist Publication

June 21-27, 1983 No. 16 38p

INSIDE

Programs to type in for: Oric, Atari, Sharp MZ-80A, TI-99/4A

Software reviews for: Spectrum, BBC, VIC, Dragon, Oric, BBC and 64

Micro tips for: ZX81 Spectrum, VIC, Oric, TI-99/4A

HOW I'll PROBE THE PIRATES

EXCLUSIVE

LAWYER Anne Staines has begun a probe into software piracy with a bid to uncover the scale of the problem.

Mrs Staines is putting questions to software companies — and she appealed for facts from readers of Home Computing Weekly.

In an exclusive interview she said: "There are two things I want to find out first.

"One is the size of both the hardware and the software market and the relationship between the two.

"My findings so far have tended to the idea that they are closely related. I want to know about the turnover, the profit margins and estimates of growth.

"And the other thing we want to find out is the amount of piracy. It's so unscientific at present. We have got all sorts of weird statistics."

One of these doubtful statistics said that for every one of the VisiCalc database package for businesses there were 10 copies.

Mrs Staines said: "I thought that was ridiculous. They were talking about 11m copies of VisiCalc."

Mrs Staines, 28, is a barrister and has a second degree in international law.

Continued on page 3

Anne Staines

Vicar defeated over micro

EXCLUSIVE

A VICAR was forced to remove his electronic hymn board, run by a 16K ZX81, because of complaints from worshippers.

"Some people though it was too gimmicky," said the Rev Malcolm Kitchen, of St Mary's, Wollaton Park, Nottingham.

Mr Kitchen had mounted a TV monitor in is church and one of his sons operated the computer to display 10in numbers showing hymns and pages in the new-style Anglican prayer book.

He said "I would program it before the services and my son would just press a key to move it forward.

"I'm not using it now because, although the congregation liked it, one or two people

Continued on page 5

QUEST

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News 5,6,13

One Man's View 13

U.S. Scene 7

Commodore show 11
Two-page special report

Spectrum software reviews . . . 15
The action ranges far and wide . . .

TI-99/4A program 17
Can you tunnel in time?

Profile: Superior Software 20
. . . taking their name seriously

Software reviews 23
. . . for Dragon, Oric-1, BBC, Commodore 64

Oric-1 program 25
Avoid the androids' deadly embrace

Software reviews 28,40

Atari program 31
On your bike — to race your micro

Spectrum software reviews . . . 33
Our reviewers rate new games

Sharp MZ-80A program 35
Only your reflexes can save you

Micro tips 39

Classified ads start on 43

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Continued from front page

She is a senior lecturer at Newcastle Polytechnic's School of Law and the city has given her a grant — to include a research assistant — to carry out a two-year investigation.

So far she has found that there are three different types of software piracy:

● The commercial black market. Many crooks had moved into software after being driven out of video piracy when the industry cracked down. The British Videogram Association had pressed trading standards officers to use the Trade Descriptions Act. Fake software — mainly cartridges — was also coming in from countries like Taiwan.

● The disguised imitation. Mrs Staines said: "This is the reverse of counterfeiting — the idea of the software is the same, but you market it as your own idea."

● Seeping. This is where users make copies for each other. Mrs Staines said: "It's like a friend asking for a copy of record. You wouldn't dream of refusing. This to date seems to be the biggest problem."

In the next few weeks Mrs Staines will be sending out a detailed three-part questionaire to software houses, including members of the Computer Trade Association.

She said "I'm trying to get feedback from both industry and the home users.

"First of all we hope to find out the state of the software market and what the market is doing.

"And we need to find out if piracy is going to adversely affect the market. It may be that cheap software may encourage more sales."

Mrs Staines' questionnaire will cover these points:

● Type of business, product line, number of employees, turnover, profit.

Continued in column 4

Continued from column 1

● The kind of piracy they have discovered and what they do when it is discovered — legal action or out-of-court settlement.

● What do they think of the present law? Should there be a tightening up with higher penalties?

Mrs Staines expects to have some conclusions within 12-18 months with some broad guides in six months.

The School of Law, Newcastle Polytechnic, Newcastle NE1 8ST

● ● ●

Doing the light fantastic

Publicity given to Chris Sievey's new single with ZX81 programs on the B-side (see HCW 11) has caused much gnashing of teeth in Hertfordshire. For Hemel-Hempstead-based band Mainframe say that they did it first.

"We had the idea of doing a single incorporating a computer program back in June last year, and released a record in February," said Mainframe's John Molloy. "But because we don't have the backing of a big record company like EMI, our record wasn't publicised — even though the master was made at EMI's Abbey Road studios."

Now Mainframe is about to release a new single, Talk To Me, under its own MC² record label. The A side will contain music, and the B side will have four programs, one each for the ZX81, Spectrum and BBC as well as the Apple.

The ZX81 program will just generate a text message. But owners of the other three micros will be able to use their programs as a sound-to-light generator, producing a version of the video display that the two-man band — John Molloy on keyboard and vocals, and Murray Munro on guitar, vocals and keyboard — use in their live show.

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thought it was too gimmicky, even though it did not look like a TV.

"I was defeated in the end by people's reaction to modern technology.

"Older people liked it because if they lost their place they could just look up and see where they were.

"It was students who took most offence — they didn't like it at all. I was taking a bit of stick from on or two so we withdrew it after it had been in use for about a year."

But computers are steadily moving into other aspects of church life. The Church Computer Users' Group has 340 members paying £2 annual subscription and it publishes three 28-page newsletters each year.

Mr Kitchen keeps his congregation's names and addresses in a database which reminds him at the beginning of each week who he is due to visit.

And his ZX81 also helps him select hymns. They are listed according to theme and when they last sung in his church. These two programs are also being used by other clergymen.

A Birmingham vicar, the Rev Nigel Hardcastle, has put maps of the Holy Land and Bible stories on his 48K Spectrum.

Children at Sunday school are asked questions in the map program and if the answer is correct animated figures appear — the Three Wise Men move across the screen to Jerusalem and Joseph travel from Nazareth to Bethlehem.

The Bible stories program again uses question and answers with cartoon versions of stories like the Prodigal Son. Mr Hardcastle sells these two programs at £3.50 each.

He also uses his computer to help choose hymns. Using Campbell Systems' Masterfile, he has built a database of 200 hymns from Ancient and Modern, listed by first line, metre, tune and theme.

A sample newsletter is available from Mr Hardcastle on receipt of a stamped addressed envelope. The group is not confined to clergy.

The newsletter editor is the Rev R. Stoker Wilson, vicar of St John's, Ryton, Tyne and Wear. He said group membership spanned most denominations and a wide range of computers.

The two maion uses for computers were word processing and for storage of parish files, including lists of church members, baptisms, weddings and funerals.

Mr Wilson uses his Genie and Epson printer to cut stencils for parish notices, including a wedding checklist for couples to be married.

He said: "Using computers gives you more time for people."

The Rev Nigel Hardcastle, Church Computer Users' Group, 112 Rotherfield Road, Garretts Green, Birmingham B26 2SH

Programs for primaries

Book publishers Longman and Ladybird have joined forces to bring out a range of software for use in primary schools.

There are four programs initially, all for the BBC B.

Rally, which comes in two versions A and B for different abilities, encourages children to learn arithmetic. Cars visit different towns on a grid, getting more fuel each time the child gets a sum right.

Terrible Tales is a text-based program in which children read about monsters and giants and then invent their own. The computer then asks them to estimate the sizes of things the giant might use.

And in **Sheepdog**, the child has to use Bonzo the dog to direct sheep into a pen. Younger children can use the cursor keys, while older ones use points of the compass.

The programs were developed at Loughborough University and masterminded by teacher Tony Gray. They were tried out in a wide range of primary schools in Leicestershire and Nottinghamshire before being put on to the market.

According to David Jamieson: "We will be doing trade versions of the programs at a later date, but this is essentially a school-based project."

A new batch of programs out in September will include Basic Number Help and Other Worlds.

The programs cost £9.95 including teacher's notes and pupil's work cards.

Geoff Gallagher, Longman Group Resources Unit, 33-35 Tanner Row, York YO1 1JP

'Surprised' Sir Clive

Computer wizard Clive Sinclair said his knighthood came as "a wonderful surprise."

Sir Clive, 42, chairman and chief executive of Cambridge-based Sinclair Research, was knighted in the Queen's Birthday Honours.

He said: "The award of a knighthood is a truly great honour and one I value very highly. It was completely unexpected and a wonderful surprise.

"More than ever, I feel committed to achieving success here, in and for Britain."

And a spokesman for the company said: "We are all delighted for him."

Sir Clive, London-born, left school at 17 and was a technical journalist for four years. He formed his own company in Islington in 1962, selling kits for radios and amplifiers by mail order.

Despite losses over a Black Watch project — blamed on chip supplies — he progressed through calculators, pocket TVs and other products until, in 1979, the National Enterprise Board and the then Mr Sinclair parted company. He formed Sinclair Research.

Sir Clive Sinclair

Now the company expects its Spectrum computer — which followed the ZX80 and the ZX81 — to sell more than 400,000 worldwide this year. With the ZX81 still selling in healthy numbers, Sinclair says it expects to have 60 per cent of the personal computer market in the UK this year.

Both computers are also on sale in more than 30 other countries.

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Software firms in compiler clash

According to Softek boss Tim Langdell, Silversoft has set a "dangerous precedent" by using the Softek Super C compiler for commercial programs without Softek's permission.

The compiler automatically converts Basic programs to machine code, and was used in Silversoft's latest batch of Spectrum programs, including Slippery Sid.

Page one of the manual supplied with the compiler states that Softek retains the right to control over the sale of commercial programs produced using Super C. Softek has offered to let Silversoft use the compiler for its programs on payment of a 5 per cent royalty.

Tim Langdell said: "If Silversoft get away with this, then conditions of sale — which they've fought for — aren't valid.

Silversoft's David Paterson

They're cutting their own throats by taking this action.

"If they'd had to write Slippery Sid from scratch in machine code, it probably wouldn't be finished yet. Seeing that you'd pay a machine code programmer a 25 percent royalty, I don't think that 5 percent is a lot to ask. The ironic thing is that if this case comes to court, the legal costs will amount to far more than the 5 percent anyway."

David Paterson of Silversoft said: "A compiler is a tool — just like a Black and Decker drill. You wouldn't expect to pay a royalty to Black and Decker every time you drilled a hole, would you? There are other compilers on the market, and no-one else charges a royalty for using them.

"The conditions of sale angle does put me in a difficult position as regards credibility. But the point is, when software libraries contravene conditions of sale, they're ripping software companies off. I don't think we're ripping Softek off by using their compiler. A compiler has no other function than to compile."

According to Tim Landell, "We offer a refund to anyone who finds the condition of sale unacceptable. So far only two people have asked for the refund, and we've sold well over 3,000 now — the compiler has sold like an arcade game."

But David Paterson says that for the condition of sale to be valid, it should be displayed at the point of sale — and that when Silversoft bought Super C, the condition was only stated in the manual.

Tim Langdell is still considering what action to take against Silversoft, but says he definitely will take action. "They're in blatant breach of our sales agreement. If coyright exists, they've breached it. Our legal adviser thinks we've got a watertight case."

Silversoft's lawyers, on the other hand, reckon that Softek 'hasn't got a leg to stand on."

Tiny discs for BBC

Three-inch disc drives are now available for the BBC micro — painted to match the computer.

Made by Hitachi, they cost £225 for the single drive and £399 for the dual model. Each disc has 100K of storage on each side and is enclosed in a rigid plastic envelope. At present the drives are only available by mail.

Advanced Memory Services, Woodside Technology Centre, Green Lane, Appleton, Warrington

Hitachi's dual 3in disc drive perched on top of a BBC micro

Lock up your joysticks

Thorn EMI is aiming to give your joysticks a nervous breakdown with four new cartridge games for the VIC and Atari.

VIC owners can travel seven thousand leagues under the sea with Submarine Commander, or fight off power-and aliens in Fourth Encounter.

While Atari owners can go to the aid of trapped explorers in River Rescue or defend castle battlements in Oric Attack.

Thorn-EMI Video, Thorn EMI House, Upper Saint Martin's Lane, London WC2H 9ED

Get it down on paper

If you need plain paper printouts from time to time, but don't want to spend upwards of £200 on a plain printer, Loophole Software has a service for you.

It has started a club which for an annual membership fee of £12.50 offers members the use of a printer and operator for producing listings, letters, graphics printouts and other copying facilities. Apart from the annual fee, you just pay for the cost of paper at around 1p per sheet.

So far, the club caters for the BBC micro, Spectrum and ZX81. It will soon be supporting View and Wordwise, enabling BBC owners to have the advantage of word processing for just the cost of the ROM chip.

For the future, Loophole hopes to add more computers to the service and install modems so that work can be sent in along telephone lines instead of by post. It is also renting space on Micronet 800, and will be able to take orders through Micronet's mail service.

Loophole Software, Arkright House, Alexandra Road, Llandrindod Wells, Powys LD1 5NG

You could be on our pages

We welcome programs articles and tips from our readers.

PROGRAMS should, if possible, be computer printed to a width of 48 characters (use a new ribbon) and/or sent on cassette. Check carefully that they are bug-free. Include details of what your program does, how it works, variables you have used and hints on conversion.

ARTICLES on using home computers should be no longer than 2,000 words. Don't worry about your writing ability — just try to keep to the style in HCW. Articles most likely to be published will help our readers make better use of their micros by giving useful ideas, possibly with programming examples. We will convert any sketched illustrations into finished artwork.

TIPS are short articles, and brief programming routines which we can put together with others. Your hints can aid other computer users.

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Keep a copy of your submissions and include an SAE if you want them returned. Label everything clearly and give a daytime and home phone number if you can.

Paul Liptrot, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE

Top Ten programs for the ZX81

1	3D Monster Maze	New Generation (2)
2	Flight Simulation	Psion (1)
3	Chess	Psion (3)
4	QS Scramble	Quicksilva (4)
5	Galaxians	Artic (6)
6	Space Raiders	Psion (7)
7	Alien Dropout	Silversoft (8)
8	Avenger	Abacus (9)
9	10 Games for 1K	J K Greye (10)
10	Catacombs	J K Greye (5)

Compiled by W. H. Smith. Figures in brackets are last week's figures

Top Ten programs for the VIC-20

1	Intro to Basic 1	Commodore (1)
2	Panic	Bug Byte (5)
3	Wacky Waiters	Imagine (8)
4	Asteroids	Bug Byte (6)
5	Arcadia	Imagine (–)
6	Amok	Audiogenic (9)
7	Cosmiads	Bug Byte (7)
8	Alien Blitz	Audiogenic (–)
9	Sea Wolf	Audiogenic (–)
10	Chess	Bug Byte (–)

Compiled by Boots. Figures in brackets are last week's figures

Top Ten programs for the Dragon-32

1	The King	Microdeal (1)
2	Space War	Microdeal (2)
3	Katerpillar Attack	Microdeal (5)
4	Planet Invasion	Microdeal (–)
5	Dragon Trek	Salamander (10)
6	Alcatraz II	Microdeal (–)
7	Defense	Microdeal (3)
8	Mansion Adventure	Microdeal (7)
9	Madness & Minotaur	Dragon (–)
10	Chess	Dragon (8)

Compiled by Boots. Figures in brackets are last week's figures

Top Twenty programs for the Spectrum

1	Flight Simulation	Psion (1)
2	Jet Pac	Ultimate (3)
3	Penetrator	Melbourne House (2)
4	Transylvanian Tower	Richard Shepherd (4)
5	The Hobbit	Melbourne House (6)
6	3D Tanx	dk'tronics (5)
7	Ah Diddums	Imagine (8)
8	Horace Goes Skiing	Psion/M. House (7)
9	Arcadia	Imagine (9)
10	Hungry Horace	Psion/M. House (11)
11	Orbiter	Silversoft (12)
12	Chess	Psion (12)
13	Ground Attack	Silversoft (17)
14	Test Match	Computer Rentals (15)
15	Space Raiders	Psion (13)
16	Football Manager	Addictive (14)
17	Battle of Britain	Microgame (16)
18	3D Tunnel	New Generation (18)
19	Time Gate	Quicksilva (20)
20	Escape	New Generation (19)

Compiled by W. H. Smith. Figures in brackets are last week's figures

We pay the price for cheapmicros

With all the recent decreases in the price of home computers here, there has been some recent attention to the fact that such price cuts are in fact just cleverly, if not thinly, disguised marketing tools.

The manufacturers realised some time ago that they could capture the mass market by placing heavy advertising emphasis on the "affordability" of their computers. Once the consumer has purchased the machine, he or she then becomes dependent on so-called "aftermarket" accessories in order to expand the system.

I suppose there is nothing legally wrong with such an approach. Morally, however, it borders on "let the buyer beware."

Here are a few examples of what I am talking about. One computer manufacturer has taken to "unbundling" the user manuals and other documentation, and selling them as "accessories" for about $50. This, of course, makes the selling price of the computer lower. But how many users, first-timers or otherwise, would be capable of utilising the computer to anywhere near the limit of its capabilities without the documentation?

Or how about another manufacturer who has dropped the price of its computer so much that it has become in essence a throw-away item. This computer now sells, in some areas of the country, for less than twice the price of the minimum charge for service. The same is essentially true for another well known domestic computer brand.

I am not against price reductions. However, the unfortunate aspect of the situation is that few users realise how much they will have to pay to obtain real computing power over and above the price of the computer itself.

For example, there are several companies who make low cost home computers that will only work with the firms' disc drives, and those drives in some cases cost well over three times the cost of the computer itself. The cost of software notwithstanding, in most cases the prices of the interface units, memory expansion devices, and peripherals are so expensive in comparison with the price of the computer, that the manufacturer could well afford to give the computer away "free" as part of a package.

My guess is that this situation would actually occur if most home computers were sold through computer store outlets. In reality, most of the low cost computers are sold through discount stores and large department stores. In such cases, accessories are not for sale or even on display.

This means the customer is in for a very unpleasant surprise when he or she visits the local computer store with plans to expand his or her system.

The surprising thing is that the customers accept all this. It is quite unlikely that, let's say, consumers of stereo equipment would accept lower prices on receivers and speakers if they then had to pay $50 each for "aftermarket accessory" cords to connect the speakers to the receiver.

It will be interesting to see, once enough people catch on to what is happening, if any consumer organisations become involved. I'll keep you posted.

Out of room again. See you next week.

Bud Izen
Fairfield, California

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- ☐ Learning to Use the Lynx

Commodore show: your guide to the best of the new products

What's new for you? Paul Liptrot found out at the Commodore show

Commodore's fourth annual show was marked by a flock of new software for the Commodore 64 — and new hardware from Commodore itself

Held over three days at Hammersmith's Cunard Hotel, the show attracted 74 exhibitors, — and 16,500 visitors — plus novelist Tom Sharpe, writing another sequel to his best-seller, Wilt, with a word processing package

The new products announced by Commodore included.

● A four-colour printer/plotter for the VIC-20 and Commodore 64 at £169 99. It uses b ack, blue, red and green ballpoint pens to create graphics and text — up to 80 characters per line — on 4½in-wide plain paper. Commodore's product, designated the 1520, uses the same mechanism as the printer from Tandy, Oric and now, Micro Peripherals

● A speech module for the Commodore 64, due on sale in the autumn at under £50, design ed to educate children of primary and pre-schoo, ages

● A new printer for the VIC 20 and Commodore 64. Catalogued as 1526, it offers — through bui t-in software — automatic line counting and error diagnostics. It can produce an original and two copies on stationery up to 10in wide. As well as the keyboard characters, it can print enlarged characters and reverse f eld The 1526 costs £345

● A new colour monitor, numbered 1701, will cost £230

Bleu Granville-Hamshar — promotions girl at the show

● The Commodore SX64 — a portable version of the Com modore 64 with built-in screen and disc/s drives was shown following its European debut in Hanover. It is due on sale later this year at £650-£995, depending on the model

● The new Commodore Educational 64 has the same technical features of the standard Commodore 64, plus a colour monitor and the LOGO educational language in PET casing

● New 64 software from Commodore includes Labyrinth, a 3D maze game on cassette at £4 99 and High Flier, at £14 95 on disc

Here is our selection of the best of the other products at the show:

Honeyfold brought out the fifth in its series of tape-and-book packages at £14 95 The latest, Beginners Assembly Language for the CBM 64, was written by Dr Peter Holmes, 43, a director of the three-man company, who teaches at Middlesex Polytechnic. The books are called the Dr Watson Computer Learning Series ..because of Dr Holmes' surname

Number Gulper, a game to help children with arithmetic, was demonstrated by Applied Systems Knowledge along with two other educational games — all previewed by Home Computing Weekly. ASK has reached agreement with Commodore to produce a further seven educational games. The first of the total of 10 will be on sale within tw months.

As promised, Anirog showed Slap Dab, a £6 painting game for the unexpanded VIC-20. There is now a new version of Krazy Kong, called Mini Kong and priced at £6, also for the unexpanded VIC. The first of a series of four graphic adventure games on one theme will be launched by Anirog at the Earls Court Computer Fair which opens on Thursday. The Dungeon will be priced at £5 95 and run on the VIC-20, plus 16K Ir the next few weeks the company will have programs for the Commodore 64 and the BBC micro

Among the new business software on show were two low-price d sc-based databases for the Commodore 64 — Magpie from Audiogenic at £99 95 and Precision Software's Superbase 64, costing £115

Audiogenic previewed Alice, based on Alice in Wonderland, an American graphic adventure for the Commodore 64. Using high-resolution graphics, it even includes a croquet match with the Queen of Hearts and music on a theme by Beethoven

Five £7 games were released by Interceptor Micros for the Commodore 64 — Scramble, Sprite Man, Crazy Kong, Frogger and Pack

Llamasoft brought out a version of its Laser Zone space game for the Commodore 64 at £6.

Andrew Trott, 20, was demonstrating a pre-production version of his Commodore 64 game called Stix on one of Supersoft's two stands. The game will cost £9 20 when in goes on sale in about a fortnight. Andrew, who is studying computer and control systems at Lanchester Polytechnic, Coventry, described the game as "electronic geometry". Supersoft launched Mikro Assembler, a £50 cartridge for the Commodore 64, Pet Link at £36.80, which allows PETs and

64s to work together; and Graphix 64, a Commodore 64 utility at £10, or £13.80 for the disc version.

It took Nick Strange, 26, eight weeks to write Hustler, a new Commodore 64 game costing £6.99 from Bubble Bus. It is a screen version of pool, including six options and a tune which sounds remarkably similar to TV's Shoot Pool theme tune. Nick said: "It was a challenge to write because there was quite a lot of maths involved in all the angles."

Ram Electronics showed its VICsprint, a £57.50 module for the Commodore 64 and VIC-20, which converts the maker's IEEE output to Centronics-type and VICsprint 80, costing £49.95, which fits inside Epson printers enabling it to accept the VIC-20's output.

Two Commodore 64 utilities on cartridge — plus dealer-fitted chip — were brought out at £37.80 each by DAMS. They are the VIC Aid toolkit and, for machine code, VIC Mon. DAMS also showed an anti-glare screen. Add-on makers Stack Computer Services will soon be bringing out a range of games, priced at £5-15, for the VIC-20, Commodore 64, BBC micro, Atari and Dragon. At the show the company had a revised vesion of its light pen, costing £28.75, offering greater accuracy, better resolution and a free £5 game. And there was also a cartridge at £44.85, allowing the VIC-20 and Commodore 64 to drive PET peripherals.

Rabbit's Floyd Thomas revealed that the company is converting six of its range of VIC-20 and Commodore 64 games for the Spectrum. They are Escape MCP, Race Fun, Quackers, Centropods, Frogger and Phantasia.

Kobra Micro Marketing had a multi-user system for the VIC 20 and Commodore 64 called 64 Switch. A two-user system costs £109.25 and a system for eight users is £134.55. Kobra also brought out two spreadsheets for the Commodore 64 — Easy CalcResult at £69 and its big brother, CalcResult, costing £94.

Computer World showed its £95 Prestel/Viewdata adaptor at £101, including £6 shipping from Holland.

Among the exhibitors at the show's educational section was EDATA, a four-man partnership which is bringing out talking books for the Commodore 64. They use Commodore's sound box to teach reading skills to children as young as three. The first releases are a series of five called The Magic Garden and five called Mr Bits.

They show pictures with a sentence below which is "spoken" by placing the cursor under the words and pressing the space bar. They are due on sale at £15 cartridges in two-three months, marketed by Commodore.

Richard Riding and Lilian Simmons showed their Get Ready to Read package, costing £15, which contains four cassettes, a children's book and manual. Dr Riding, lecturer in educational psychology, and Mrs Simmons, a headmistress, designed the package of computer activities for children aged three-five to prepare them for reading.

They will be published by Commodore in September. And in the spring of next year, Dr Riding and Mrs Simmons are bringing out Start to Read, for children of five-seven, and Get Ready for Numbers, designed for three-five-year-olds.

Stack's Jane Hanna — with revised light pen

Martin Shoebridge, of Ram — plus VIC Sprint

Where to find them

Commodore Business Machines, 675 Ajax Avenue, Slough, Berks SL1 4BG
Honeyfold Software, Standfast House, Bath Place, High Street, Barnet, London
4SK, 68 Upper Richmond Road, London SW15 2RP
Anirog, 26 Balcombe Gardens, Horley, Surrey
Audiogenic, P.O. Box 88, Reading, Berks
Precision Software, 4 Park Terrace Worcester Park, Surrey KT4 7QX
Interceptor Micros, Lindon House, The Green, Tadley, Hants
Llamasoft, 48 Mount Pleasant, Tadley, Hants RG26 6BN
Supersoft, Winchester House, Canning Road, Wealdstone, Harrow, Middx HA3 7SJ
Bubble Bus, 87 High Street, Tonbridge, Kent
Ram Electronics (Fleet), 106 Fleet Road, Fleet, Hants GU13 8PA
DAMS Business Computers, Gores Road, Kirby Industrial Estate, Liverpool L33 7UA
Stack Computer Services, 290-298 Derby Road, Bootle, Liverpool L20 8LN
Rabbit Software, 380 Station Road, Harrow, Middx HA1 2DE
Kobra Micro Marketing, P.O. Box 28, Henley, Berks RG9 1PF
Computer World, 99 Hivert sweg, 1214 JB Hilversum, Holland
EDATA, 3 Chancel Way, Charlton Kings, Cheltenham, Gloucs GL53 7RR
Dr Richard Riding, Department of Educational Psychology, University of Birmingham

Newsagents looking Sharp

SHARP'S new home computer, due here in September at £250, will go on sale in electrical stores, stationery shops . . . and even corner newsagents

Sales boss Richard Buckland explained. "People like to buy from shops they are familiar with. They are probably going into electrical shops every week anyway to pay their TV rental

"And the service these give is pretty good already because they are accustomed to it."

The MZ711 is due to make its UK debut at the Microtrade show at London's Barbican centre on July 6-7 and the first shipment of 10,000 from Japan should be on dealers' shelves in September

Sharp describe it as a "clean machine" — the computer language has to be loaded before use

Roughly the size of a portable typewriter, it has 69 keys — including four cursor keys, two editing keys and five function keys — in an off-white casing

It has 64K of RAM, leaving 32K free after BASIC has been loaded, 4k of video ROM and 4k of ROM to handle the 512 characters, which include 400 ready-defined characters designed to make programming easier

Characters are constructed out of eight by eight pixels and the screen can display 25 lines, each of 40 characters. Eight foreground and eight background colours are available with all 16 possible on screen at once.

Although most cassette recorders and RS-232 printers can be used, Sharp is marketing its own which will fit into the top of the computer after two panels have been removed

The printer/plotter, costing £130, uses the same mechanism as the models sold by Tandy, Oric and Micro Peripherals. It uses tiny ballpoint pens, in red, blue, green and black, to print on 4½in-wide plain paper

Sharp's cassette player will cost £40

Graham Knight, the big Aberdeen-based Sharp distributor, has been signed as an approved software supplier

Every MZ711 will come with a free BASIC cassette plus two tapes with a total of 10 games

The MZ711 would offer outputs for colour and black and white TVs and video monitor, two joysticks ports, input-output for RS-232, reset button and volume control for the speaker

It would use an extended version of Sharp's BASIC, with 71 commands, and up to 256 characters could be in one line

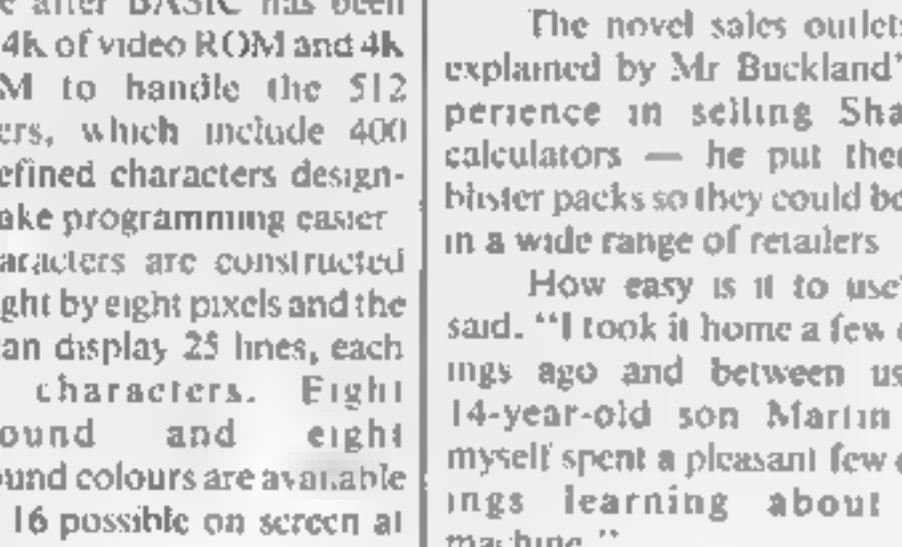
Mr Buckland said the computer was aimed at the same market as the Commodore 64 and the Atari 800 and he expected to sell 40,000 by the end of the year through high street multiples, mail order, electrical shops, office equipment suppliers, stationery stores — "and even your local newsagent, believe it or not"

The novel sales outlets are explained by Mr Buckland's experience in selling Sharp's calculators — he put them in blister packs so they could be sold in a wide range of retailers

How easy is it to use? He said. "I took it home a few evenings ago and between us my 14-year-old son Martin and myself spent a pleasant few evenings learning about the machine"

The MZ711 has been on sale in Japan since November and the launch in Britain is simultaneous with the European mainland Sharp's models MZ-80A and 80B are to continue, he said

Sharp UK, Thorn Road, Newton Heath, Manchester M10 9BE



Sharp's MX711 — on the shelves in September

Here endeth the first lesson

In the beginning God created the heavens and the earth. And the earth was without form, and void

And God said, let there be light, and there was light. And God divided the light from the darkness, and called the light Day and the darkness he called Night

And when God had created heaven and earth he did create everything that did swim in the seas and walk or crawl upon the face of the earth

And on the sixth day of creation God went forth and created man

By the seventh day man was sorely vexed. And God saw it and created the mainframe computer. Man looked on the mainframe computer and said that it was good

Once again man became sorely vexed and yeah the Lord did come down and gave unto him the minicomputer. And man for a while was content

Then man once again became bored and God said, I will give unto you a miraculous game called Adventure. Man did like this new game and God saw this and said that it was good

Anon, the computer shrunk in size and became the microcomputer, and the microcomputer begat the personal computer, and there were a multitude of these personal computers on the face of the earth. And some of them were called home computers

Soon it came to pass that there was a great wailing and gnashing of teeth as different races of man did take unto themselves one micro alone and did raise it up above all others and did communicate with computer magazines for untold riches and to claim superiority over any other machine

Meanwhile there was increasing a race of creatures that could program computers in a strange tongue called masheen coad. And some of them did earn exceeding great wealth

And God did call them Eugene and the like. They multiplied and covered the face of the earth, and many grown men and women did fear for they did not understand the strange machines like the young ones did

Once more it came to pass that there was a great war, neither was the dispute solved as to whether one computer was superior to all the rest. And many of the youth did sit at home all night and day and did raise up unto themselves a false god (or two). And the names of the gods were BBC and Spectrum and Atari and VIC. The young people worshipped them and brought them gifts of printers and made sacrifices to them called software

And great quantities of software were bought and software houses saw that it was good and Psion made a pretty penny and so did the rest

It came to pass that man was divided into two tribes. One was called the computer literate, and they did rise up and become mighty. And there were two great elders of that tribe were called Clive Sinclair and Herman Hauser. They did organise the computer literate and world domination did soon follow and they did even persuade the mighty film companies to make films about computers. And the first of these great films was called Tron.

The other tribe remained nameless and without form, and went in for great races called marathons and did suffer greatly and did soon dwindle in number until there was left only the computer literate. And they did all live happily ever after.

Peter Muritsch

● This space is for you to sound off about the micro scene, to present bouquets or to hurl brickbats. Share your views by sending them to Paul Liptrot, Opinion, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE. Please include your occupation and your interest in computing.

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Reaction games — across the Spectrum

The action ranges far and wide, from motorways to far-off planets, in this selection of Spectrum games. Our reviewers have ventured into known and unknown territory to bring you their ratings

Horace and Spiders
£5.95

Psion, 2 Huntsworth Mews, Gloucester Place, London NW1 6DD

The story so far, having satisfied his appetite and relaxed (!) by spending a few days skiing, our rotund hero is now about to attempt to fend off invasion of deadly spiders

To do this he must first climb a mountain (also jumping over wandering spiders), do a Tarzan act across a valley using dangling spider web threads and, finally, climb up and along various levels of spider web, stamping to create holes into which the spiders pop to repair This allows Horace to stamp on their heads until they fall to their death. (Some similarities, methinks, to a well known arcade game.)

As you would expect from Psion excellent graphics and animation, good sound, careful use of colour, clear, simple instructions and a tape which loaded easily.

The control/keys are well set out, the game is fast and the difficulty level increases for each set of spiders stamped to death Pressing S holds the game while you get your breath back. Addictive factor, 100 percent

R.E.

instructions	96%
playability	100%
graphics	95%
value for money	100%

ETX
£5.95

Abbex, 20 Ashley Court, Great Northway, London NW4

Simular in format to the Atari VCS games Adventure and Superman, this is the first of its type that I've seen for the Spectrum

In a nutshell, you move ETX (any resemblance to a well-known film alien is entirely intentional) round different screens, collecting fruit and avoid the mad professor and MI5 agent

Helped by his friend Ernie, ETX must collect three pieces of his "telephone", phone home and escape. You can choose the level of difficulty and, in certain positions, make use of ETX's special powers.

Speech is effective and must be at the limit of the Spectrum's capabilities. Graphics are excellent and animation superb

A combination of graphics adventure, maze and chase games makes this an unusual, fascinating and addictive program which must rank among the Spectrum classics. You've wept over the film, read the book, bought the souvenirs — now get the tape!

R.E.

instructions	85%
playability	90%
graphics	100%
value for money	100%

Road Toad
£4.95

Elfin Software, Hudsons House, Battery Road, Great Yarmouth NR30 3NN

How do you decide on one version of Frogger out of all the versions on the market! One important factor is cost, of course — and this game is competitively priced

For those who aren't au fait with the arcade game genre, the aim of Frogger and its look-alikes is to get a series of frogs safely home, first moving them across hazards including a busy multi-lane highway, a fast-flowing river and, in this case, a snake pit

Your frogs can hop up down, left or right — and, in Elfin's version, the control keys are bunched a little too close for comfort

No written instructions came with Road Toad, and the only details appearing on screen were those of the four direction keys. But on the whole, a good reproduction of the arcade game.

D.N.

instructions	20%
playability	70%
graphics	80%
value for money	90%

Jet Pac
£5.50

Ultimate Play the Game, The Green, Ashby de la Zouch, Leics LE6 5JU

You are a space-suited adventurer on an alien planet. First you must assembly your rocket from its component parts, then collect fuel to power it. At the same time you are fighting off the local aliens with your Quad Photon Laser Phaser and collecting the goodies (gems, gold etc) that you find lying around

Having refuelled you head off for another planet where you proceed to slaughter the locals and plunder their valuables all over again But after four planets your spaceship wears out, and you must build another one from scratch

You can choose a one- or two-player game and use either keyboard or a Kempston joystick Good graphics, with many small touches that put this program well ahead of the pack.

Movement is easy to control, and the degree of difficulty such as to make this an entertaining and addictive game

P.F.

instructions	90%
playability	90%
graphics	90%
value for money	90%

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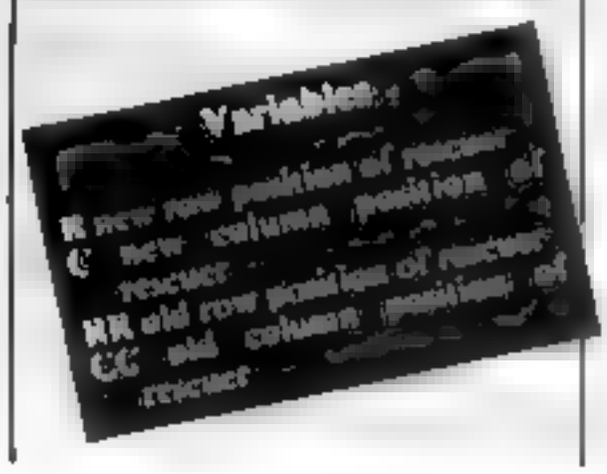
You're on an errand of mercy in Dave Slinn's game for the TI-99/4A. So don't delay — it's a matter of life and death.

Deep underground, under four layers of rock, there's a trapped miner — and your job is to rescue him. But there's no time to lose, for any minute now the mine could blow up

Once you think you've become an expert rescuer, you can increase the challenge by altering line 1720.

How it works

10-220 instructions
300-530 define characters
560-1000 set up playing area
1010-1480 set up random layers of 4 different layers of rock
1490-1610 explosion sound & graphics
1720 initial start time
1730-1800 start of countdown
1840-1870 test for direction of movement
1880-2010 update position of rescuer
2020-2120 keep rescuer in playing area
2140-2350 check future position of rescuer
2370-2700 update position of rescuer, colour flash and drill sound
2710-2810 check old position of rescuer
2820-3100 determine length of time to drill rock
3220-3290 countdown routine
3310-3360 message print routine




```
5 REM  MINE MAZE D.H.SLINN.
10 CALL CLEAR
20 PRINT          ***MINE MAZE***"
30 PRINT
40 PRINT "YOU HAVE TO RACE AGAINST"
50 PRINT  TIME THRO' DIFFERENT LAYERS"
60 PRINT   OF ROCK TO SAVE THE MINER."
70 PRINT
80 PRINT      THERE ARE 4 DIFFERENT
90 PRINT "HARDNESS S OF ROCK RANDOMLY
100 PRINT  PLACED. AS EACH SECTION IS'
110 PRINT "DRILLED IT S HARDNESS AND
120 PRINT  THE POSITION OF ROCK OF THE'
130 PRINT  SAME HARDNESS IS SHOWN FOR A"
140 PRINT          SHORT TIME
150 PRINT
160 PRINT  SOME OF THE ROCK IS TO HARD'
170 PRINT "          FOR YOUR DRILL."
180 PRINT
190 PRINT       ***USE ARROW KEYS***
200 PRINT
210 PRINT
220 PRINT       PRESS ANY KEY TO START.
230 PRINT
240 CALL KEY(0,K,S)
250 IF S=0 THEN 240
260 CALL CLEAR
270 FOR I=9 TO 16
280 CALL COLOR(I,2,2)
290 NEXT I
295 REM  DEFINE GRAPHICS
300 CALL CHAR(128  3...3181818181...8
310 CALL CHAR(129  1...1810...1476...)
320 CALL CHAR(130, 0...1...3F,...7FFFFF...)
330 CALL CHAR(131, FFFFFFFFFFFFFFFF...)
340 CALL CHAR(132  181...1818...1818...)
350 CALL CHAR(133  FF...FF
360 CALL CHAR(134  6...0...3F8F...FF...)
370 CALL CHAR(135, 0...)
380 CALL CHAR(136, 3F...0FF...4...8...
390 CALL CHAR(137, FC0,FF...
400 CALL CHAR(138  ...F...
410 CALL CHAR(139  FC0...
420 CALL CHAR(140  FF...
430 CALL CHAR(141  3...
440 CALL CHAR(142, 18...42...
450 CALL CHAR(143,"5A9999999999993999")
460 CALL CHAR(144  FFFFFFFFFFFFFFFF
470 CALL CHAR(145  0...0F1F3F3F7FFF...FF...)
480 CALL CHAR(146  0...0F1F...FFFF...)
490 CALL CHAR(147, 0...
500 CALL CHAR(148  ...0...0...FFFFFF...)
510 CALL CHAR(149,"0000000000E0FFFF22")
520 CALL CHAR(150  181...
530 CALL CHAR(151, FF...
540 CALL CLEAR
550 CALL SCREEN(6
560 CALL HCHAR(4 11 141)
570 CALL HCHAR 5 11,142)
580 CALL HCHAR(6 11,135)
590 CALL HCHAR(6,13,137)
600 CALL HCHAR(6 15 138)
610 CALL HCHAR(6,16,139)
620 CALL HCHAR(6,19,145)
630 CALL HCHAR(6 20 144)
640 CALL HCHAR(6 21 144)
650 CALL HCHAR(6,22 144)
660 CALL HCHAR(5,20,145)
670 CALL HCHAR(5 21,147
680 CALL HCHAR(6 14 140)
690 CALL HCHAR(6 11,144
700 CALL HCHAR(17,1 1 1)
710 CALL HCHAR(17 2 134
720 CALL VCHAR(7,1 ,26,16
730 FOR I=3 TO 10
740 CALL HCHAR 17 I 135)
750 NEXT I
760 CALL VCHAR 2,11 1,1 2)
770 CALL VCHAR(7,11 1,2 ,5)
780 CALL HCHAR(22,11 1,2)
790 CALL HCHAR(17,3,135 8)
800 FOR I=3 TO 9 STEP 2
810 CALL HCHAR 17 I 126)
820 NEXT I
830 CALL HCHAR 6,1 32,19)
840 CALL VCHAR(7,11,132 15)
850 CALL HCHAR(6,17 32,2)
860 CALL HCHAR(6,23 32,10)
870 CALL HCHAR 6,19,145)
880 CALL HCHAR(6,20,131,2,
890 CALL HCHAR(6,22,148)
900 FOR I=13 TO 27 STEP 2
910 CALL HCHAR,22,I,128,
920 NEXT I
930 FOR I=12 TO 26 STEP 2
940 CALL HCHAR(22,I,135)
950 NEXT I
960 CALL HCHAR(22,29,130)
970 CALL HCHAR(22,30,131,3)
980 FOR I=3 TO 9 STEP 2
990 CALL HCHAR(17,I,126)
1000 NEXT I
```

Hints on conversion

TI Basic is almost the same as other micro basics with the following exceptions:

CALL HCHAR pokes the screen with the character named eg CALL HCHAR (12,6,32) puts a space at row 12 column 6
eg CALL HCHAR (12,6,32, 3) will put 3 spaces horizontally across the screen starting at row 12 column 6.
CALL VCHAR same as HCHAR but vertical
CALL CHAR defines user graphics
CALL GCHAR peeks the screen, same format as HCHAR
CALL KEY inputs data direct from the keyboard without having to press return/enter key
CALL CLEAR clears the screen
The TI screen is divided into 32 vertical columns and 24 horizontal rows

TI-99/4A PROGRAM

```
1005 REM * POSITION DIFFERENT LAYERS OF ROCK
1010 RANDOMIZE
1020 C=12
1030 R=7
1040 A=INT(4*RND)+12
1050 CALL HCHAR(R,C,A*8,3)
1060 C=C+3
1070 IF C>32 THEN 1080 ELSE 1040
1080 C=12
1090 R=R+1
1100 IF R=22 THEN 1090 ELSE 1110
1110 IF R=25 THEN 1120 ELSE 1040
1120 C=2
1130 R=7
1140 A=INT(4*RND)+12
1150 CALL HCHAR(R,C,A*8,3)
1160 C=C+3
1170 IF C>10 THEN 1180 ELSE 1140
1180 C=2
1190 R=R+1
```

```
1200 IF R=17 THEN 1210 ELSE 1220
1210 R=R+1
1220 IF R=25 THEN 1230 ELSE 1140
1230 FOR I=1 TO 3
1240 C=INT(17*RND)+13
1250 CALL VCHAR(7,C,96,10)
1260 NEXT I
1270 FOR I=1 TO 3
1280 C=INT(9*RND)+2
1290 CALL VCHAR(8,C,96,7)
1300 NEXT I
1310 FOR I=1 TO 4
1320 R=INT(14*RND)+4
1330 C=INT(7*RND)+2
1340 CALL HCHAR(R,C,152,3)
1350 CALL VCHAR(R,C+2,152,2)
1360 NEXT I
1370 FOR I=1 TO 12
1380 R=INT(16*RND)+7
1390 C=INT(19*RND)+12
1400 CALL HCHAR(R,C,152,2)
1410 CALL VCHAR(R,C+1,152,3)
1420 NEXT I
1430 CALL HCHAR(22,28,129)
1440 CALL COLOR(13,2,15)
1450 CALL VCHAR(7,1,120,18)
1460 CALL HCHAR(17,2,134)
1470 CALL COLOR(14,13,6)
1480 CALL COLOR(15,2,6)
1485 REM  EXPLOSION
1490 CALL SOUND(1000,-4,0)
1500 CALL SOUND(100,-7,0)
1510 CALL HCHAR(22,26,134)
1520 CALL SOUND(100,-6,0)
1530 CALL HCHAR(22,25,144)
1540 CALL SOUND(50,-7,2)
1550 CALL HCHAR(22,18,144,7)
1560 CALL SOUND(600,-6,2)
1570 CALL HCHAR(22,17,130)
1580 CALL SOUND(1000,-7,0)
1590 CALL HCHAR(22,15,134)
1600 CALL HCHAR(22,14,130)
1610 CALL HCHAR(22,11,134)
1620 FOR I=1 TO 3
1630 CALL HCHAR(6,2,150)
1640 FOR D=1 TO 200
1650 NEXT D
1660 CALL HCHAR(6,2,32)
1670 FOR D=1 TO 100
1680 NEXT D
1690 CALL SOUND(50,1000,5)
1700 NEXT I
```

```
1710 CALL HCHAR(6,2,150)
1715 REM  SET UP START OF COUNT
1720 TIME=90
1730 R=6
1740 C=2
1750 TIME=TIME-1
1760 IF LEN(STR$(TIME))=1 THEN 1770 ELSE 1780
1770 CALL HCHAR(4,26,32)
1780 FOR I=1 TO LEN(STR$(TIME))
1790 CALL HCHAR(4,I+24,ASC(SEG$(STR$(TIME),I,1)))
1800 NEXT I
1810 CALL SOUND(100,-4,2)
1820 CALL KEY(0,K,S)
1825 REM  TEST FOR OUT OF TIME
1830 IF TIME=0 THEN 3300
1840 IF K=68 THEN 1900 ELSE 1850
1850 IF K=83 THEN 1920 ELSE 1860
1860 IF K=69 THEN 1940 ELSE 1870
1870 IF K<>88 THEN 1750 ELSE 1880
1880 DR=+1
1890 GOTO 1950
1900 DC=+1
1910 GOTO 1990
1920 DC=-1
1930 GOTO 1990
1940 DR=-1
1950 RR=R
1960 CC=C
1970 R=R+DR
1980 GOTO 2020
1990 CC=C
2000 RR=R
2010 C=C+DC
2020 IF C>32 THEN 2030 ELSE 2050
2030 C=32
2040 GOTO 1750
2050 IF C<1 THEN 2060 ELSE 2080
2060 C=1
2070 GOTO 1750
2080 IF R<6 THEN 2090 ELSE 2110
2090 R=6
2100 GOTO 1750
2110 IF R>24 THEN 2120 ELSE 2140
2120 R=24
2130 GOTO 1750
2135 REM  TEST FOR HARDNESS OF ROCK
2140 CALL GCHAR(R,C,X)
2150 IF X=96 THEN 2370
2160 IF X=104 THEN 2450
2170 IF X=112 THEN 2560
2180 IF X=120 THEN 2820
2190 IF X=32 THEN 2920
2200 IF X=131 THEN 2950
2210 IF X=128 THEN 2990
2220 IF X=134 THEN 3020
2230 IF X=144 THEN 3020
2240 IF X=138 THEN 3020
2250 IF X=148 THEN 3020
```

TI-99/4A PROGRAM

```
2260 IF X=145 THEN 3020
2270 IF X=135 THEN 2990
2280 IF X=129 THEN 3060
2290 IF X=143 THEN 3460
2300 IF X=132 THEN 3480
2310 IF X=136 THEN 3550
2320 IF X=137 THEN 3550
2330 IF X=138 THEN 3550
2340 IF X=139 THEN 3550
2350 IF X=152 THEN 2660
2360 GOTO 1750
2370 CALL COLOR(9,11,11)
2380 CALL SOUND(200,30000,30,30000,30,440,30,-4,0)
2390 CALL SOUND(400,30000,30)
2400 CALL COLOR(9,2,2)
2410 GOSUB 3220
2420 CALL HCHAR(RR,CC,135)
2430 CALL HCHAR(R,C,150)
2440 GOTO 1750
2450 REM
2460 FOR D=1 TO 2
2470 CALL COLOR(10,10,10)
2480 CALL SOUND(200,30000,30,440,12,440,30,-4,0)
2490 CALL SOUND(400,30000,30)
2500 CALL COLOR(10,2,2)
2510 GOSUB 3220
2520 NEXT D
2530 CALL HCHAR(RR,CC,135)
2540 CALL HCHAR(R,C,150)
2550 GOTO 1750
2560 FOR D=1 TO 3
2570 CALL COLOR(11,5,5)
2580 CALL SOUND(200,30000,30,880,12,440,30,-4,0)
2590 CALL SOUND(400,30000,30)
2600 CALL COLOR(11,2,2)
2610 GOSUB 3220
2620 NEXT D
2630 CALL HCHAR(RR,CC,135)
2640 CALL HCHAR(R,C,150)
2650 GOTO 1750
2660 FOR D=1 TO 3
2670 CALL COLOR(16,16,2)
2680 CALL SOUND(200,30000,30,1000,12,440,30,-4,0)
2690 CALL COLOR(16,2,2)
2700 NEXT D
2710 IF K=68 THEN 2760
2720 IF K=83 THEN 2700
2730 IF K=69 THEN 2800
2740 R=R-1
2750 GOTO 1750
2760 C=C-1
2770 GOTO 1750
2780 C=C+1
2790 GOTO 1750
2800 R=R+1
2810 GOTO 1750
2820 FOR D=1 TO 4
2830 CALL COLOR(12,4,4)
2840 CALL SOUND(150,30000,30,880,12,440,30,-4,0)
2850 CALL SOUND(400,30000,30)
2860 CALL COLOR(12,2,2)
2870 GOSUB 3220
2880 NEXT D
2890 CALL HCHAR(RR,CC,135)
2900 CALL HCHAR(R,C,150)
2910 GOTO 1750
2920 CALL HCHAR(RR,CC,32)
2930 CALL HCHAR(R,C,150)
2940 GOTO 1750
2950 CALL SOUND(100,200,4,210,4,-4,3)
2960 CALL HCHAR(RR,CC,135)
2970 CALL HCHAR(R,C,150)
2980 GOTO 1750
2990 CALL HCHAR(RR,CC,135)
3000 CALL HCHAR(R,C,150)
3010 GOTO 1750
3020 CALL SOUND(100,110,9,140,9,440,30,-4,0)
3030 CALL HCHAR(RR,CC,135)
3040 CALL HCHAR(R,C,150)
3050 GOTO 1750
3060 FOR I=1 TO 4
3070 CALL SOUND(100,1000,I
3080 FOR D=1 TO 50
3090 NEXT D
3100 NEXT I
3105 REM  WINNING ROUTINE
3110 M$="YOU DID IT!"
3120 R=18
3130 C=19
3140 GOSUB 3310
3150 M$="PRESS ANY KEY
3160 R=20
3170 C=10
3180 GOSUB 3310
3190 CALL KEY(0,K,S
3200 IF S=0 THEN 3190
3210 GOTO 780
3215 REM  TIME COUNTDOWN ROUTINE
3220 TIME=TIME-1
3230 IF LEN(STR$(TIME))=1 THEN 3240 ELSE 3250
3240 CALL HCHAR(4,26,32
3250 FOR I=1 TO LEN(STR$(TIME))
3260 CALL HCHAR(4,I+24,ASC(SEG$(STR$(TIME),I,1)))
3270 NEXT I
3280 CALL SOUND(100,-4,2)
3290 IF TIME=0 THEN 3330
3300 RETURN
3305 REM  PRINT MESSAGE ROUTINE
3310 FOR I=1 TO LEN(M$)
3320 CD=ASC(SEG$(M$,I,1))
3330 CALL HCHAR(R,C,CD)
3340 C=C+1
3350 NEXT I
3360 RETURN
3370 STOP
3375 REM  LOSE ROUTINE
3380 CALL SOUND(100,200,4)
3390 CALL SOUND(250,110,1)
3400 M$="***FAILED***"
3410 R=16
3420 C=17
3430 GOSUB 3310
3440 GOTO 3150
3450 END
3460 C=10
3470 GOTO 1750
3480 FOR D=1 TO 4
3490 CALL SOUND(200,400,4,200,4,-4,2)
3500 GOSUB 3220
3510 NEXT D
3520 CALL HCHAR(RR,CC,135)
3530 CALL HCHAR(R,C,150)
3540 GOTO 1750
3550 R=7
3560 GOTO 1750
```

PROFILE

The company with a superiority complex

When you call yourself Superior Software, you've got a lot to live up to. Dave Carlos met partners John Dyson and Richard Hanson, and got the lowdown on their company's high aspirations

"Having a high opinion of our programs and believing that our overall standard was as good as anything else then available, gave us our name." So says John Dyson, one of the partners of Superior Software

John and his partner Richard Hanson set out in autumn last year to market their own arcade game software. For Richard, who has a degree in computing science, this is more or less his first job since leaving university, "While studying I spent a year Cobol programming for an insurance company, probably best forgotten", he said

Both had previously written games for the Acorn Atom, which they marketed through other software companies. But dissatisfaction with the way their games were treated made them decide to see if they could do a better job themselves. John says one company didn't advertise his programs properly, and both believe that screen pictures of the game are essential for the purchasers to get an idea of what they are buying

After meeting to try to help each other develop their programming skills they began to work together. Now each game is usually coded by one and criticised by the other

Richard works for the company full time, both programming and dealing with marketing John, who still works as an electronics engineer for a broadcasting company, "only works part time for Superior"

While taking a university degree in physical sciences, John didn't like computing at all. "It was the Space Invader machine at work which first awakened me to its potential", he recalled.

"The Acorn Atom was the first cheap, good quality computer and from opening mine up I was hooked So much so that I stayed up two nights running just using the machine that first week, until exhaustion took over!"

So Superior Software was born, with four arcade games for the BBC micro. Their launch just before Christmas was well timed They despatched over 300 cassettes during November and over 4,000 during December, and Richard claims that Superior now sells considerably more than that.

Superior's tape duplicating is carried out in-house

The rise in standard of other software writers gives both men a continuing challenge. "Our new Frogger and Road Runner programs are undoubtedly our best yet and are selling very well. But we are still on the lookout for other games, and have some exciting games from other writers still to come.

"We are getting more programs from other writers now and are impressed by the increasing standard, but wish we could respond more quickly to the authors. Our new staffing plans should help remove this problem."

Day to day administration is in the hands of Cyril Dove, whose role is as hard to define as it is vital to the company. He deals with despatch, correspondence, the telephone, and copying, which is presently carried out in-house at 69 Leeds Road, Bramhope, Leeds

But due to the interest of the big retail chains the copying is likely to go out of house soon A single order, likely to be in the thousands, would swamp their current arrangements.

In common with other software houses Superior reports that sales to dealers are now outstripping mail order, but see this as good for customers, who get to see that they are buying before spending any money. They do not plan to drop mail order though

One project now in the pipeline is a target shooting game for the BBC micro, which will be sold as a gun and cassette package. The gun fits into the joystick port and responds to a bright dot on the screen. At the moment the project is still at the testing stage, with both partners shooting moving stars in their quieter moments, but they see it as an interesting departure for the future

The addition of more machines to their range is also imminent, with Assembler and Toolkit packages for the Oric-1 completed recently and due for release. Arcade games are likely to be the next on the list for this machine. "The public like arcade games more than original ones", Richard said, "but eventually we plan some original arcade quality releases for both machines." The Oric programs may be released in ROM form as well as on cassette

"We feel we have missed the Sinclair boat now, but would like to write for any new machine they release. The problem is getting in quickly enough, which is why we are working on the Oric at the moment."

One problem they have already encountered with writing for the Oric is that it doesn't have a checksum on loading. "This means that a program may appear to have loaded correctly when it hasn't, and therefore won't run. To get around this we have written a routine which does check our programs and gives an error message if all is not well."

Another difficulty with the Oric is that the break key, hidden under the machine, doesn't provide a full hardware reset, so sometimes the only way out of a program is to pull the plug and lose it completely

John and Richard hope to convert their existing catalogue to run on the BBC-compatible Electron. That doesn't mean that they don't expect problems Like other software houses, the new operating systems and the new Basic which have appeared for the BBC have brought problems "But at least the Calls are documented on the Acorn machines", said Richard "On the Oric we are exploring uncharted territory and don't even know if there is more than one issue of the ROM chip.

"We would like to give a money-back guarantee to our customers so that they could return a tape which they didn't like, but the amount of copying which goes on in this business prevents us from doing so" says John. "People don't really think about the effect of their actions in these cases. Libraries also pose a threat to our existence and if too many spring up they will put not only us but themselves out of business. If they were to pay a royalty to the programmer for each loan then things would be fairer "

With so many plans and ideas, this company should be worth watching. And they don't intend that anyone should ever be able to take their title 'Superior' away from them either. So be warned!

John takes aim at a new game for the BBC

John Dyson and Richard Hanson feeling superior

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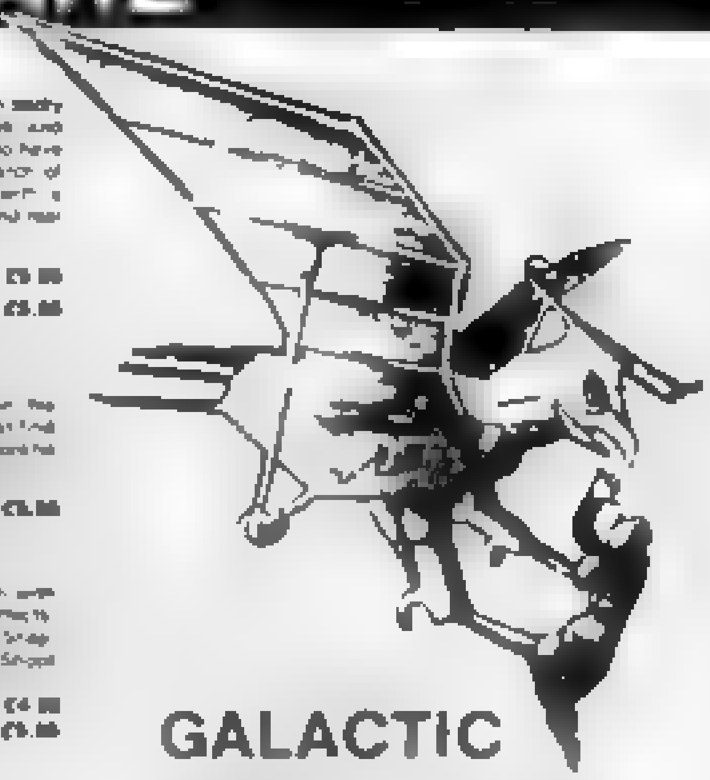

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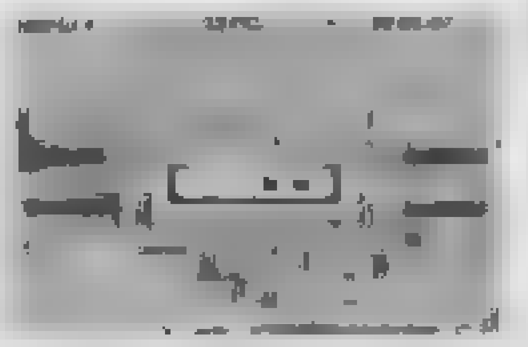

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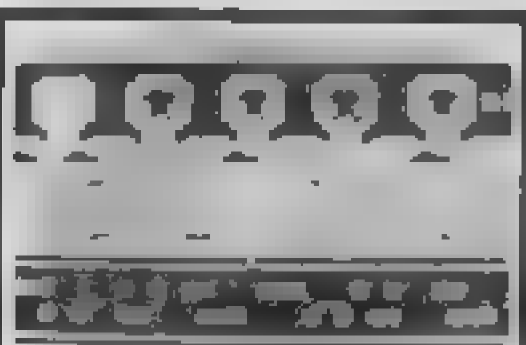

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Software to put a picture in your program

Which to choose from the graphics packages coming on to the market? Our reviewers have had designs on four of them — here are their opinions

Graphics System Dragon £9.95

Salamander, 27 Ditchling Rise, Brighton, East Sussex

This graphics system lets you draw pictures using all the Dragon's hi-res modes and colour sets. One joystick is used to manipulate a moving cursor, and the keyboard controls the graphics facilities

The eight-page manual supplied with the system explains the numerous features and commands that are available reasonably well, but you can go back to the "help" menu at any point if you get stuck

You can choose to draw lines, boxes, arcs, elipses, polygon or any kind of irregular shape. You can paint your picture with a "fill" command, and write in text of any size

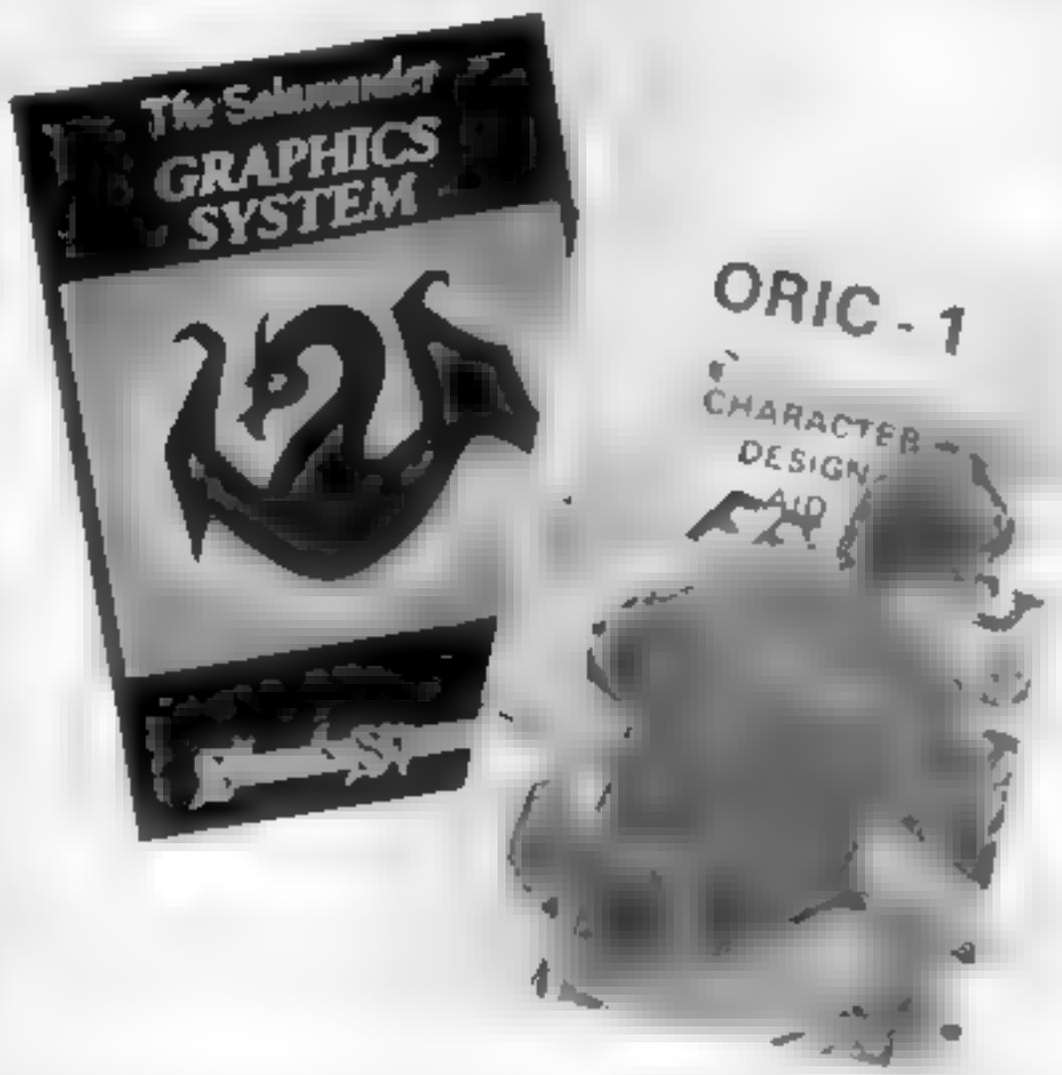
Having drawn your masterpiece, you can save it on cassette. The shapes you have created can also be stored in a shapes library so that they can be used later on

The text feature in the graphics system is also supplied as a separate program and data file, so that you can easily incorporate text in hi-res mode in any of your own programs.

Once all the commands had been mastered, I found the system easy to use. With its comprehensive range of facilities, it offers a slick method of adding colourful graphics to your programs.

C.D.

instructions	80%
ease of use	90%
display	85%
value for money	85%



Draftmate BBC B Disk £12.50 Cass. £9.95

Computasolve, 8 Central Parade, St Marks Hill, Surbiton, Surrey KT6 4PJ

Interactive graphics programs (picture drawing to you and me!) seem to be appearing in profusion at the moment. This one is a good one of its kind with most of the facilities you're likely to need.

You can create pictures, using keys or joysticks, to be dumped to the printer or to be saved for later use. They can even be incorporated into other programs when needed (this facility is not documented in the cassette version but is there, I believe).

Among its many facilities, two I particularly like are Update and Magnify. Update means that the screen you are creating can be saved in part and then different trials can be made based on that part without corrupting it in any way

Magnify is a powerful editing procedure allowing the alteration of single (yes, single!) pixels. Unfortunately the booklet provided doesn't explain this facility very well

The only parts of the package that were less than satisfactory were the circle plotting, which is very slow (compared to Grafdisk) and the documentation, which could be clearer in places. D.C.

instructions		60%
ease of use		90%
display		80%
value for money	(disk)	90%
	(cassette)	70%

Design Aid 48K Oric-1 £5.50

Kenema Associates, 1 Marlborough Drive, Worle, Avon

There has been a trend for user-defined graphics programs to appear in magazines soon after the launch of new micros with the udg facility. This is true for the Oric 1 (see HCW no. 3), and so to persuade Oric owners to actually part with cash, a udg program needs to have something special. This one doesn't, quite.

It lets you modify or re-design any character in the standard or alternative character set.

Having specified which character you wish to alter, you move a cursor around an enlarged character square display, setting or re-setting pixels until you have the character you want. The character you are creating is also shown in normal size.

Alongside the enlarged character square are the byte addresses and values of the new character. You have to jot these down when complete — there are no options to save on cassette or obtain a printer listing (the 'extras' that this program lacks).

D.N.

instructions	60%
ease of use	80%
display	40%
value for money	30%

Easy Sprite Commodore 64 £8.00

TUE Software, 1 Brackenhill, Sandy Lane, Cobham, Surrey, KT11 2EW

As the name suggests, this package allows you to create your own Sprites (moveable graphics characters similar to these on the Atari machines), and use them in future programs of your own Upon running, the display shows a large box representing the area occupied by a Sprite on the screen.

A moveable cursor which is controlled by the CSR keys can then be used to colour in squares and so build up the shape of the Sprite. When complete, the Sprite is then converted into a series of data statements

Other options include Display Sprite, which moves the created shape across the main screen in its true size; Change Sprite, which allows alteration of the current character, and Create New Sprite, which features an audible and visual warning that any previous shapes will be lost.

There was no documentation supplied with the review copy, and bugs in the program were apparent throughout its use

D.A.

instructions	25%
ease of use	60%
display	50%
value for money	50%

Page 24 HOME COMPUTING WEEKLY 21 June 1983

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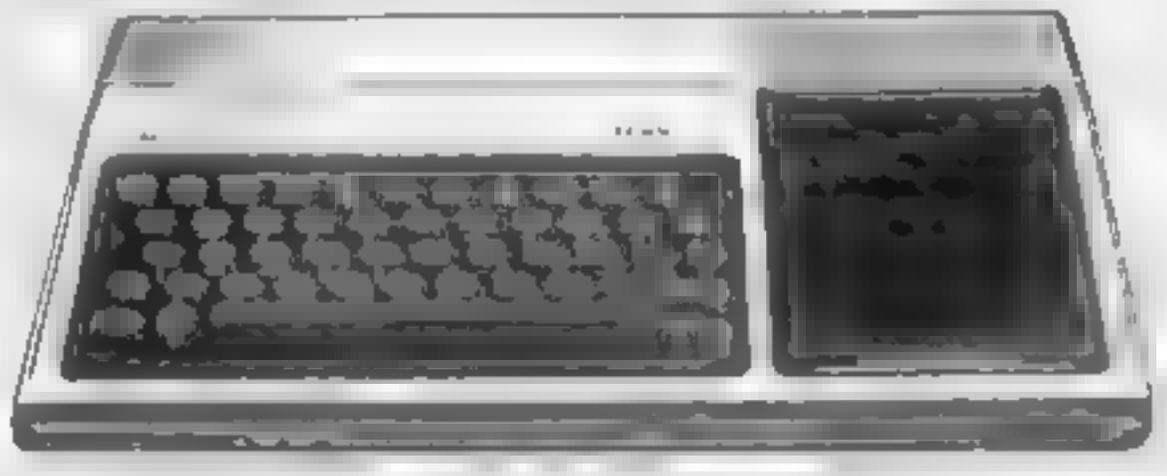

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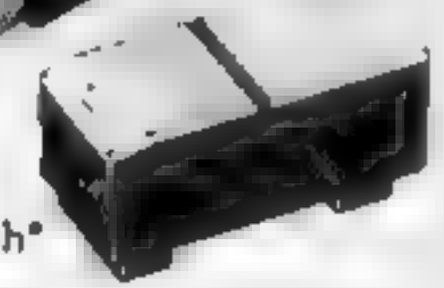

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ORIC-1 PROGRAM

Trapped! Can you avoid the androids' deadly embrace?

Even if you survive the androids, the Master Control Robot is only seconds away . . . and there's no stopping it. Android Attack, by Grant Privett and Martin Jones, is an exciting game for the 48K Oric-1, easily converted for the 16K model

You are trapped in the Federation Control Complex. The android hordes are out to get you and their cold embrace is deadly

To survive you must battle the androids with your trusty photon pistol until the doors open and you can make a break for the next room But move fast, and Master Control Robot is in hot pursuit and only seconds away Nothing can stop its advance

Your guide your man around the complex by using the cursor controls and fire your gun by pressing both the shift key (either one will do) and the appropriate cursor control

This program was written for the 48K Oric but with a few changes will run on the 16K version. The differences lie in those lines where the character set is modified, such as lines 330 and 650 where a location is *POKEd to give the androids flashing eyes*

This means that all POKEs above 16384 (4000) should have 32768 (8000) subtracted.

Hints on conversions

Conversions for other machines using Microsoft BASIC are simple as long as a PLOT or PRINT@ command is available, though substitutes for the sound commands will be needed

The program was originally written using integer variables extensively but these were subsequently found to be slower then floating point variables.

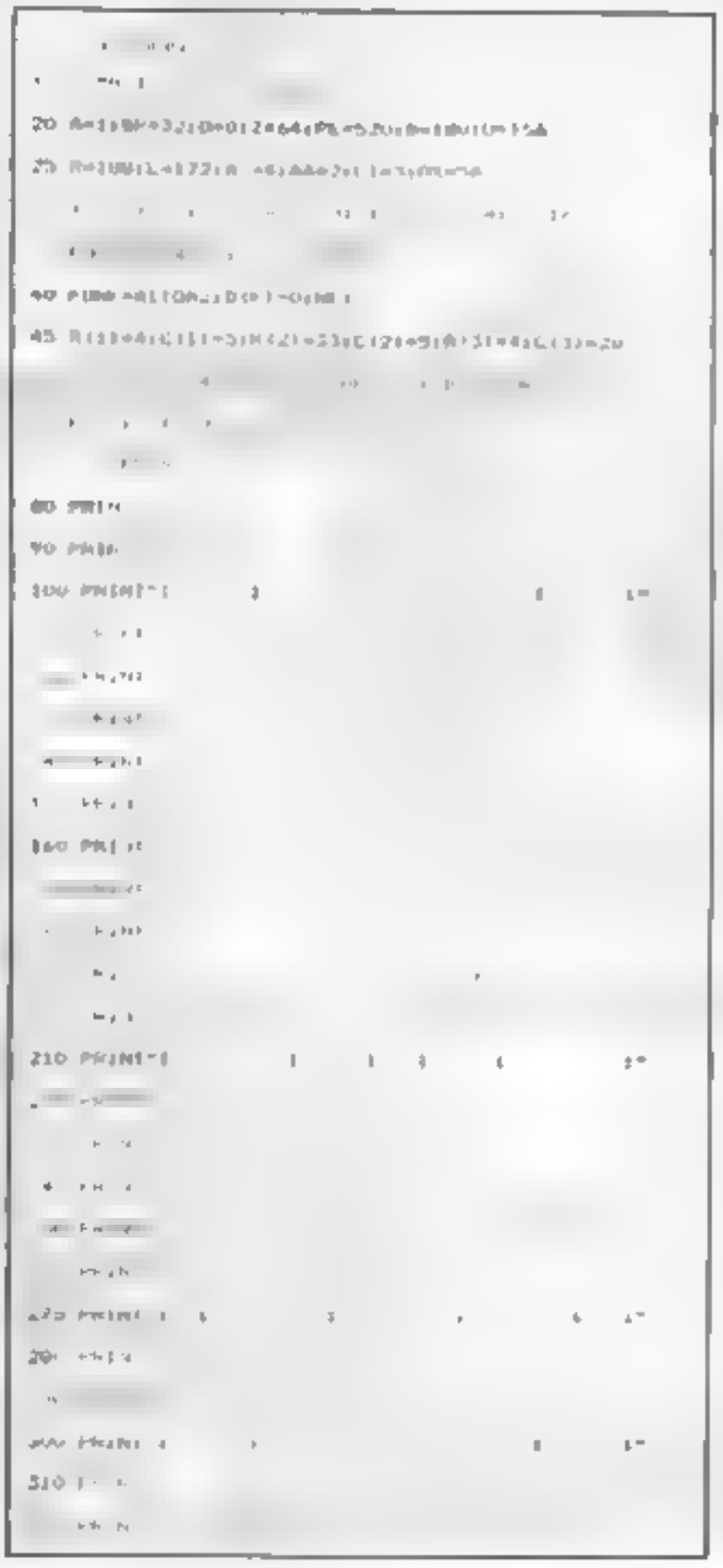
It would also be necessary to know the *PEEK* locations for the keyboard and shift controls.

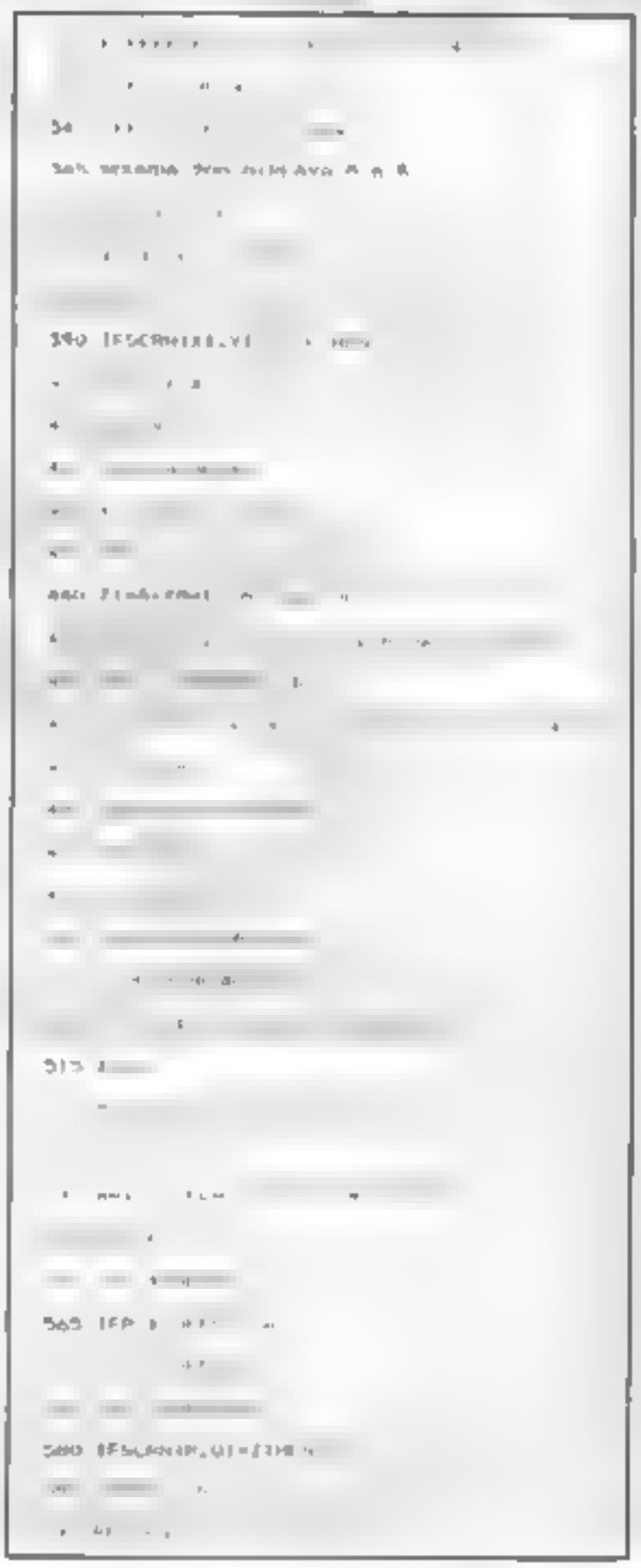
How it works

5-55 variable table
70-320 board drawing
330-340 keyboard input
345-400 new player position
410-440 fire missile
450 plot player character
475-490 check gate
500-540 open gate
550-590 move master android
600-640 move missile
650-750 move androids
760-800 player death routine
810-840 androids death routine
850-887 androids recover
890-10000 end of screen/game
1010-1130 redefine characters
1200-1540 instructions

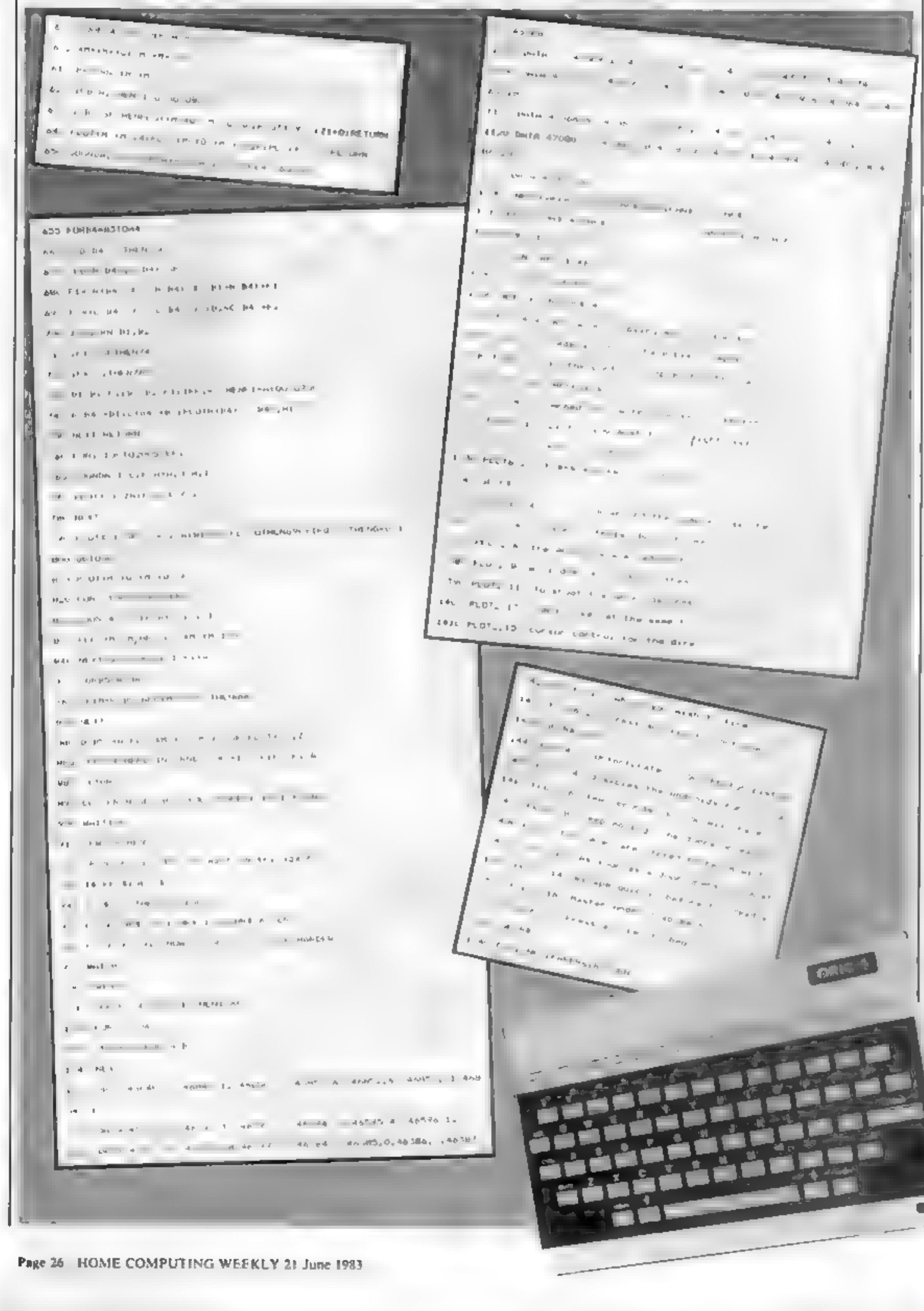
Variables

Z player's screen character
U,D,X,L cursor control PEEK locations
O,D,X,L cursor control PEEKs
L() number of lives
X,Y player's starting location
H1 android character
Z4 missile character
CO moves counter
G time until gate open
N master android character
X1,Y1 player's current location
XM,YM missile's current location
KI number of manual androids
SK score
K(),C() android locations
D() manual androids





ORIC-1 PROGRAM



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These programs for a range of ages and micros aim to take the pain out of learning. Here's how our reviewers rated them

Smiler
BBC B £5.95

GTM Software, 864 York Road, Leeds, Yorks

A word is displayed with one letter missing, and the player has to enter any letter that will make a real word. After each correct entry, the option is given to use the same letters or try another word

A score is kept and, after all possibilities are exhausted, the player can try another set. Suitable faces are displayed for correct or wrong inputs.

The program is incredibly well error trapped — I had trouble trying to get out of it! — and very user friendly. Supplied with the tape is a printout of instructions, including a detailed method for changing the word lists and aimed at the non-programmer

Aimed at junior schools, it would also be useful for remedial children who have problems with phonics/letter recognition

Colour is used sparingly and graphics are minimal, but the program is easy to use and the ability to turn off the sound is a bonus which stops any classroom irritation. A nice, friendly request for comments and an offer to help with problems makes you feel that this company cares!

R.E.

instructions	90%
playability	83%
graphics	50%
value for money	85%

★★★★

At the Circus
VIC-20 plus 8 or 16k £5.95

Sumlock, Royal London House, 198 Deansgate, Manchester M3 3NE

Based on a circus theme, this game is designed for young children from about four to seven years old and introduces them to basic maths

Inside the circus tent is a high wire act, and the aim is to count the number of acrobats. If the correct answer is entered, the number of performers changes — otherwise the display is repeated until the child gets it right

Occasionally the men jump off the wire and after bouncing in a safety net form a human pyramid to demonstrate the difference between tens and units.

The program includes some basic addition and subtraction, and the speed of operation can be altered to suit the childs' ability. A score card is kept of correct answers

Parental supervision will be needed, at least to set up the [illegible]

V R

instructions	60%
playability	70%
graphics	50%
value for money	90%

★★★

Forensic
BBC B £5.00

Worm Software, 70 Hurstwood Road, New Oscott, Birmingham B23 5BY

Here's your chance to be a forensic scientist and help solve some dastardly murder! Each game begins by the discovery of a body which has been contaminated with some chemical plus ink stains But for each murder the scenario is different.

Your task is to discover by chemical analysis what the contamination on the body is and try to detect the murderer from a given list of suspects, all of whom have some sort of contamination on the soles of their shoes. Each suspect is given an alibi which may or may not be true

The various tests include, flame, HCL, barium chloride, sodium chloride, chromatography etc

This is an interesting game to play and could be quite useful for those studying O-level chemistry. In any event it is fun A pity that, except in the chromatography tests, so little use was made of graphics.

P.C.

instructions	80%
playability	65%
graphics	40%
value for money	75%

★★★

Map of UK
48K Spectrum £11.95

Kuma, 11 Work Road, Maidenhead, Berks

This is a map in search of an application. It offers a lot of information at the press of a few keys, but not the kind of information — on roads, for example, or major landmarks — that would make it useful for applications like route-planning Its major use will be in schools (and scout huts?), where its novelty value may prove to be educational value too.

What it does do is present you with a large-scale outline map of the UK, with hundreds of place names plotted in their relevant positions. The program is menu-driven, allowing you easy access to its various functions.

You can search for a given place name, determine the distance between two positions on the map, find the latitude/longitude of any specified point, remove/restore all place names, carry out a quick scan of the entire map, copy the screen to a printer and play a hot-air balloon game

Having chosen a particular area for study, you can scroll the map across the screen using the cursor control keys. A small grid pattern at the top right of the screen show where you are in relation to the map as a whole

The program is easy to use, and although the graphics are rudimentary, the display and place name positions are clear and easy to read

P.F.

instructions	90%
ease of use	90%
graphics	70%
value for money	60%

★★★

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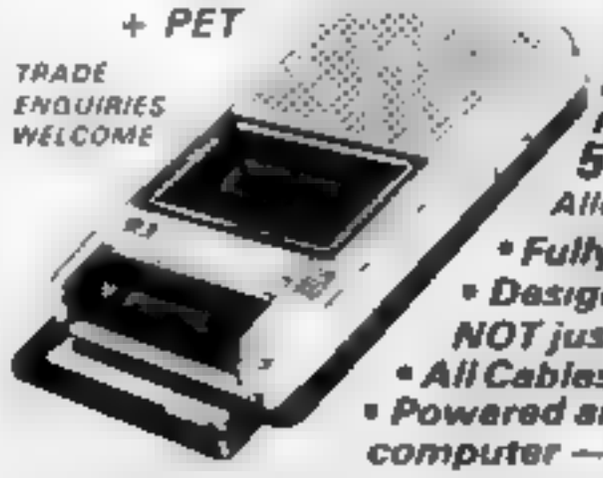

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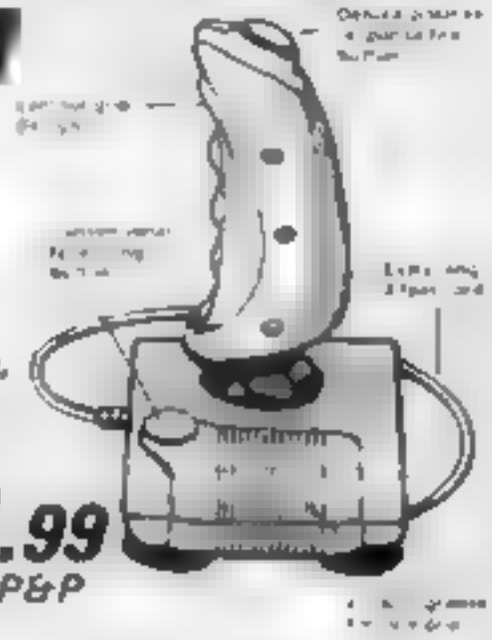

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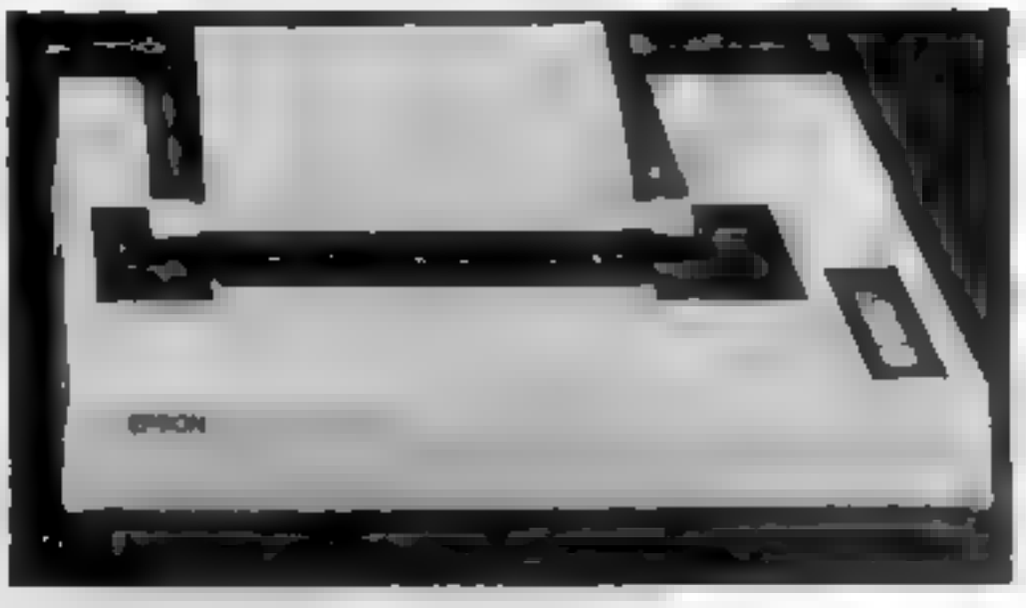

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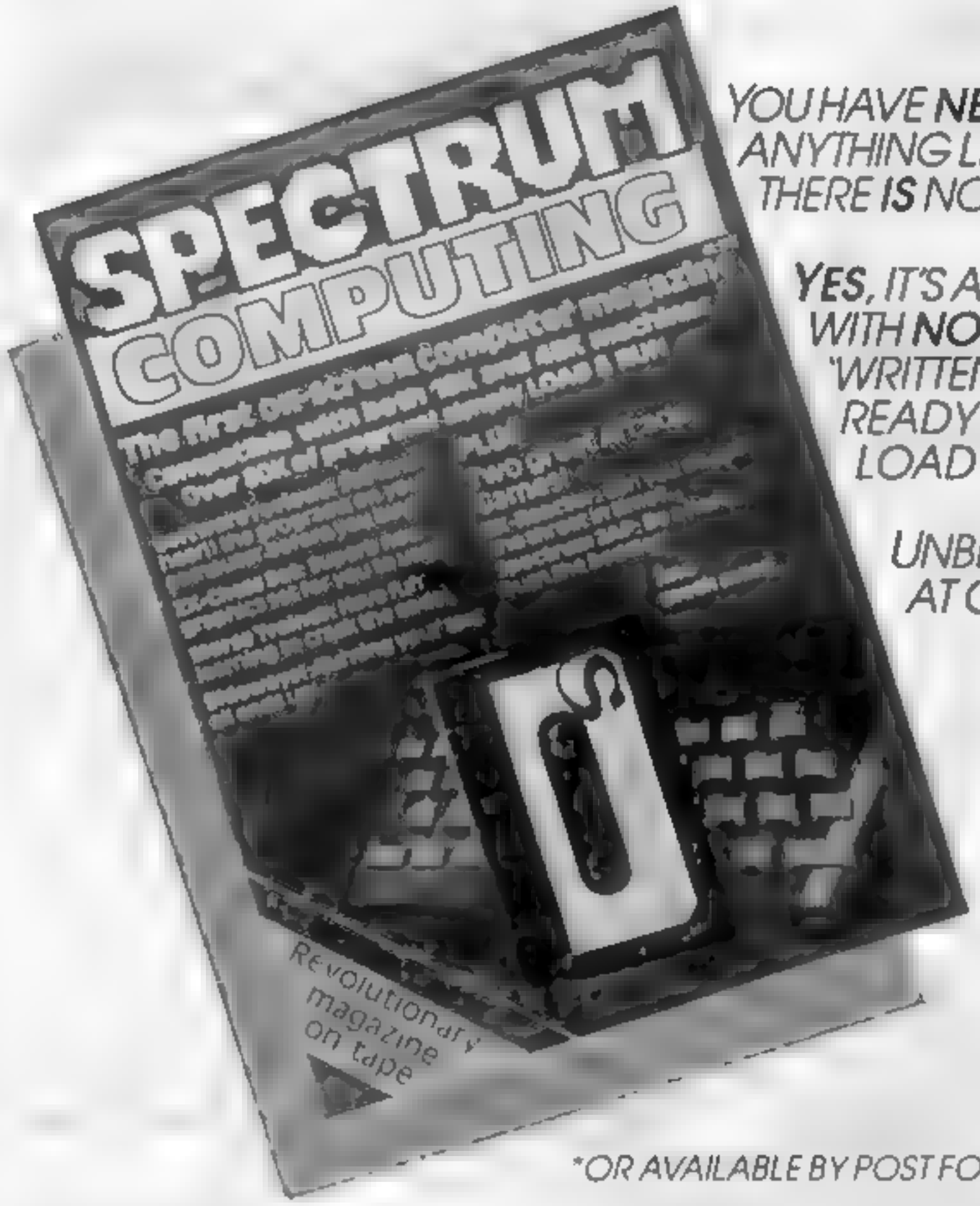

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ATARI PROGRAM

Bike your way around nine screens

Your computer has a better chance of beating you, thanks to the way Marc Freebury has coded his Light Cycle game for the 32K Atari

The basic structure of my Light Cycle game comes from a fairly well established concept — two objects leave trails behind them and they have to avoid colliding with each other or the trails

Many versions are for two players — this being easier to program — but some do allow for a computer player

There are two main problems with a computer bike

First, if you write the game in BASIC it is likely to run very slowly as all the computer's decision-making takes up time

Secondly, the screen is a very limited area in which to play, so a human player has a far better idea of what is going on than even the best computer algorithm

To solve the first problem, I wrote the entire main game in asssembler and then placed it in data statements in a BASIC program

This allows the simpler pieces of code which are not time-critical — like the front page — to be handled efficiently

The second program needed thought. In the end I decided to use the screen as a window into a much larger playing area, thus negating some of the human advantage

The playing area I settled on is the size of nine screens (see diagram) and takes more than 15K of memory. For this reason you will need a 32K machine to run this game — sorry.

The character set is also slightly redefined

My different approach caused problems. The computer cycle is very often out of sight and collisions with a trail that wasn't there a second ago are common. Play testers found this a challenge

Second, the computer cycle can box itself in off-screen, thus ending the game unexpectedly This is annoying, but you do get used to it

There are more than 700 DATA points in this game so there is a very high chance of typing them in wrongly

So a checksum variable is provided. If CHK does not equal 61237, the main game has not been typed in correctly SAVE it before running

How it works

100-230 initialisation of machine code, redefinition of character set
240-350 front page and difficulty level handling
360-420 entry to and exit from the main game, with scoring
430-450 disable BREAK key routine
460-470 machine code routine to relocate character set
480-490 new characters
500-760 main game machine code data

Hints on conversion

I have one simple suggestion don't. The game is far too machine dependent to warrant a detailed conversion guide. The basic ideas contained within the game could fairly simple and you have a BBC or Atom machine with on board assembler you should have little difficulty with a bit of rewrite

Variables

DIFF difficulty level
CHK checksum, MUST equal 61237
M% computer's cycle
Y% player's cycle

Layout of the nine screens used in Light Cycle

```
100 REM ******************
110 REM *                 *
120 REM * LIGHT-CYCLES    *
130 REM * BY M.FREEBURY   *
140 REM *                 *
150 REM ******************
160 GRAPHICS 0:GOSUB 430:SETCOLOR 2,0,15
:SETCOLOR 4,0,15:DIFF=1
170 A=PEEK(560)+PEEK(561)*256:POKE A+3,7
1:POKE A+6,7:? CHR$(125);" * LOADING M/C
 *"
180 RESTORE 500:FOR I=13568 TO 14204:REA
D N:POKE I,N:CHK=CHK+N:NEXT I:IF CHK<>61
237 THEN GRAPHICS 0:? "M/C ERROR":STOP
190 GRAPHICS 0:GOSUB 430:SETCOLOR 2,0,0:
SETCOLOR 4,0,0
200 A=PEEK(560)+PEEK(561)*256:POKE A+3,7
1:POKE A+6,7:POKE A+14,6:POKE A+15,6
210 RESTORE 460:FOR I=0 TO 31:READ N:POK
E 1536+I,N:NEXT I
220 X=USR(1536,57344,7168):POKE 756,28
230 RESTORE 480:FOR I=0 TO 39:READ N:POK
E 7192+I,N:NEXT I
240 POSITION 5,0:? "light cycle"
245 REM PRECEDING LINE ALL INVERSE.
250 POSITION 2,2:? "OBJECTIVE IS TO AVOI
D COLLISION WITH"
260 POSITION 7,4:? "WALLS    TRAILS    E
NEMY"
270 POSITION 9,6:? "%":POSITION 18,6:? "
&":POSITION 26,6:? " "
280 POSITION 7,8:? "wins":POSITION 21,8:
? "YOU "
290 POSITION 14,10:? "DIFFICULTY ";DIFF
300 POSITION 10,12:? "PRESS button TO BE
GIN":POSITION 6,14:? "PRESS select FOR D
IFFICULTY"
305 REM PRECEDING LINE,HOLDS 'BUTTON' AN
D 'SELECT' IN INVERSE.
310 POSITION 9,16:? "(c) 1983 marc freeb
ury"
```

```
320 A=(PEEK(711)+1)*(PEEK(711)<255):POKE
 711,A
330 A=PEEK(53279):POKE 77,0
340 IF A=5 THEN DIFF=(DIFF+1)*(DIFF<5)+(
DIFF=5):GOTO 290
350 IF STRIG(0) THEN 320
360 GRAPHICS 0:GOSUB 430:SETCOLOR 2,0,0:
SETCOLOR 4,0,0
370 FOR I=0 TO 3:SOUND I,I*15,I*4,8:NEXT
 I
380 POKE 14200,(5-DIFF)*2+1
390 X=USR(14090)
400 FOR I=0 TO 3:SOUND I,0,0,0:NEXT I
410 M=PEEK(14196):ME=ME+(M=1):YOU=YOU+(M
=2)
420 GOTO 190
430 IF PEEK(16)>127 THEN POKE 16,PEEK(16
)-128:POKE 53774,PEEK(16)
440 POKE 752,1:? " "
450 RETURN
460 DATA 104,104,133,204,104,133,203,104
,133,206,104,133,205,162,4,160,0
470 DATA 177,203,145,205,136,208,249,230
,204,230,206,202,208,240,96
480 DATA 255,129,129,129,129,129,129,255
,0,66,195,60,36,60,195,66
490 DATA 85,170,85,170,85,170,85,170,255
,255,255,255,255,255,255,255,189,60,
195,219,195,60,189
500 DATA 169,0,141,0,6,169,64,141,1,6,16
5,88,141,2,6,165,89,141,3,6,96,173,0,6
510 DATA 133,0,173,1,6,133,1,173,2,6,133
,4,173,3,6,133,5,169,0,141,4,6,160,0
520 DATA 177,0,145,4,200,192,40,208,247,
165,0,24,105,160,133,0,144,2,230,1,165,4
,24,105
530 DATA 40,133,4,144,2,230,5,238,4,6,17
3,4,6,201,24,208,213,96,173,0,6,133,0,17
3
540 DATA 1,6,133,1,169,0,141,110,55,141,
111,55,160,0,169,5,145,0,230,0,165,0,201
,0
550 DATA 208,2,230,1,238,110,55,173,110,
55,201,0,208,3,238,111,55,173,111,55,201
,7,208,222
560 DATA 173,110,55,201,128,208,215,96,1
73,0,6,133,0,173,1,6,133,1,169,0,141,112
,55,160
570 DATA 0,169,5,145,0,200,192,19,208,24
9,169,3,145,0,200,192,139,208,249,169,5,
145,0,200
580 DATA 192,160,208,249,165,0,24,105,16
0,133,0,144,2,230,1,238,112,55,173,112,5
5,201,72,208
590 DATA 206,96,72,201,14,208,16,198,1,1
65,0,24,105,96,133,0,144,64,230,1,76,42,
54,201
600 DATA 13,208,14,165,0,24,105,160,133,
0,144,46,230,1,76,42,54,201,11,208,13,19
8,0,165
610 DATA 0,201,255,208,29,198,1,76,42,54
,201,7,208,13,230,0,165,0,201,0,208,12,2
30,1
620 DATA 76,42,54,104,173,113,55,76,218,
53,104,96,173,114,55,133,0,173,115,55,13
3,1,160,0
630 DATA 169,6,145,0,173,0,6,133,0,173,1
,6,133,1,173,120,2,32,218,53,141,113,55,
165
640 DATA 0,141,0,6,165,1,141,1,6,173,0,6
,24,105,147,141,114,55,173,1,6,105,7,141
650 DATA 115,55,173,114,55,133,0,173,115
,55,133,1,160,0,177,0,201,3,240,5,169,1,
141,116
660 DATA 55,169,4,145,0,32,161,54,32,21,
53,172,120,55,162,0,202,208,253,136,208,
248,173,116
670 DATA 55,201,0,208,3,76,44,54,96,173,
118,55,133,0,173,119,55,133,1,160,0,169,
6,145
680 DATA 0,173,117,55,32,218,53,72,160,0
,177,0,201,3,240,46,104,162,144,173,10,2
10,201,4
690 DATA 176,249,168,173,118,55,133,0,17
3,119,55,133,1,185,121,55,32,218,53,72,1
60,0,177,0
700 DATA 201,3,240,10,104,202,208,219,16
9,2,141,116,55,72,104,141,117,55,173,10,
210,201,250,176
710 DATA 200,165,0,141,118,55,165,1,141,
119,55,169,7,160,0,145,0,96,104,32,0,53,
32,90
720 DATA 53,169,71,141,1,6,169,128,141,0
,6,32,152,53,169,116,141,1,6,169,128,141
,0,6
730 DATA 32,90,53,32,0,53,169,7,141,113,
55,169,72,141,115,55,169,211,141,114,55,
169,0,141
740 DATA 198,2,169,28,141,244,2,169,0,14
1,116,55,169,81,141,119,55,169,106,141,1
18,55,169,11
750 DATA 141,117,55,169,65,141,1,6,169,6
4,141,0,6,32,44,54,169,224,141,244,2,96,
0,0
760 DATA 0,0,0,0,0,0,0,0,0,7,11,13,14
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Time for a Spectrum games inspection

This weeks's line-up is a mixture of old and new themes. Our review panel has assembled to give its verdicts, so if you're sitting comfortably . . .

The Black Hole £5.50

Quest, 119 The Promenade, Cheltenham, Glouc

The game itself couldn't possibly live up to its superlative-laden advertising (Simply the Best: A New Dimension etc etc). It is pretty good, though, with excellent graphics. The "incredible ... sound effects" are fair but unimpressive, the "100% machine code" is very fast, and the control keys are responsive if somewhat unorthodox.

In the centre of the screen is the Black Hole, from which alien spacecraft emerge in three directions. You have three weapons to destroy them with

Your spaceship is confined to the left half of the screen, where you are in danger of colliding with indestructible objects in constant motion up and down

The game is difficult and takes practice — happily Quest have included a practice mode But to egg you on is the thought that your high score might get to win a T-shirt, or even to compete in a championship at the end of the year

R.E.

instructions	70%
playability	68%
graphics	73%
value for money	80%

★ ★ ★ ★

Galaxions £5.95

Mikro-gen, 24 Agar Crescent, Bracknell, Berks

You can tell you're tangling with Galaxions rather than Space Invaders because the hostile aliens move more unpredictably — and you have no bases to cower behind. The aliens at each end of the advancing horde tend to peel off and dive down towards you When they do, all you can do is keep out of their way. You can't really win this kind of game — it's more a matter of how long you can stay alive

Mikro-gen's version has simple, effective graphics I particularly like the continuously scrolling stars in the background

It's a game for one or two players, using either keyboard or joysticks, both of which give you easy control over your ship There's a high score option, and you can choose your playing speed

For all that this is a neat interpretation and will probably get a fair amount of play, though, I feel that software companies ought to be thinking in terms of more elaborate plot and presentation

P.F.

instructions	80%
playability	85%
graphics	60%
value for money	60%

★ ★ ★

Spectrum Safari 48K £9.00

A J Rushton, 194 Shay Lane, Walton, Wakefield, W Yorks WF2 6NN

The theme of escaping from an island links together nine mini games within this program. The whole thing is a hybrid of adventure and arcade games — but hardened adventurers will find the random factor too high and lack of purely logical processes frustrating, while arcade addicts will find the reaction games too easy

But I applaud the concept, and feel that the game has a lot to offer younger users or those who just want something a bit different. Moreover the graphics are good, colour is used effectively, and the tunes are cleverly selected

You can choose three levels of play, and there's a practice mode for any of the nine subgames. These vary from a version of Simon to a simple version of Asteroids called Leaping Lemmings, and a nice touch of humour runs throughout. R.E.

instructions	80%
playability	68%
graphics	72%
value for money	75%

★ ★ ★

Panic £5.95

Mikro gen, 24 Agar Crescent, Bracknell, Berks

Moving around a strange landscape of floors connected by different lengths of ladders are your alien adversaries, cunningly disguised as vicious Granny Smiths. To dispose of these rotten apples you must first dig a hole for them to fall into, and then quickly batter them to death

If they climb out before you get to them, they change colour, and you then have to arrange for them to fall through two or more holes before they die

As you progress from level to level their numbers increase, and some really tough characters join the fray too

This is a competent, colourful variation on an unoriginal theme. Hardly a game for the pacifists among us, but jolly good fun all the same I'll still enjoy playing it a year from now

P F.

instructions	80%
playability	85%
graphics	70%
value for money	65%

★ ★ ★ ★

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HCW 6

Trapped . . . and only your reflexes can save you

Use your laser bolts to fight your way to safety in Archie Glendinning's game for the Sharp MZ-80A. He's made full use of his micro's screen features

Your spaceship is trapped in a narrow corridor and to survive you must avoid the sides and use your laser cannons to good effect

There are comprehensive rules in the program listing, but here is a brief resume

Your ship, symbol Y, is launched into the corridor after a warning count of 40. This warning is actually setting up the course

As you start to move off "crash ships" will start moving inwards from both sides of the corridor. You can shoot these... but they'll reappear

You can also shoot the stars and these vanish for good

You have only seven laser bolts, but be warned — you must keep one to shoot a hole through the finishing line

Next you move into a slightly narrower corridor and this will continue until you have finished on a width of eight characters

The program, which occupies just over 5K of RAM, makes use of the Sharp MZ-80A's memory mapped screen

Unlike any other computer I know, it has what is called a roller-coaster screen which means you can roll it up and down to your heart's content

Therefore, instead of only one screen of memory — from 53248 to 54247 — you also have from 54248 to 55247

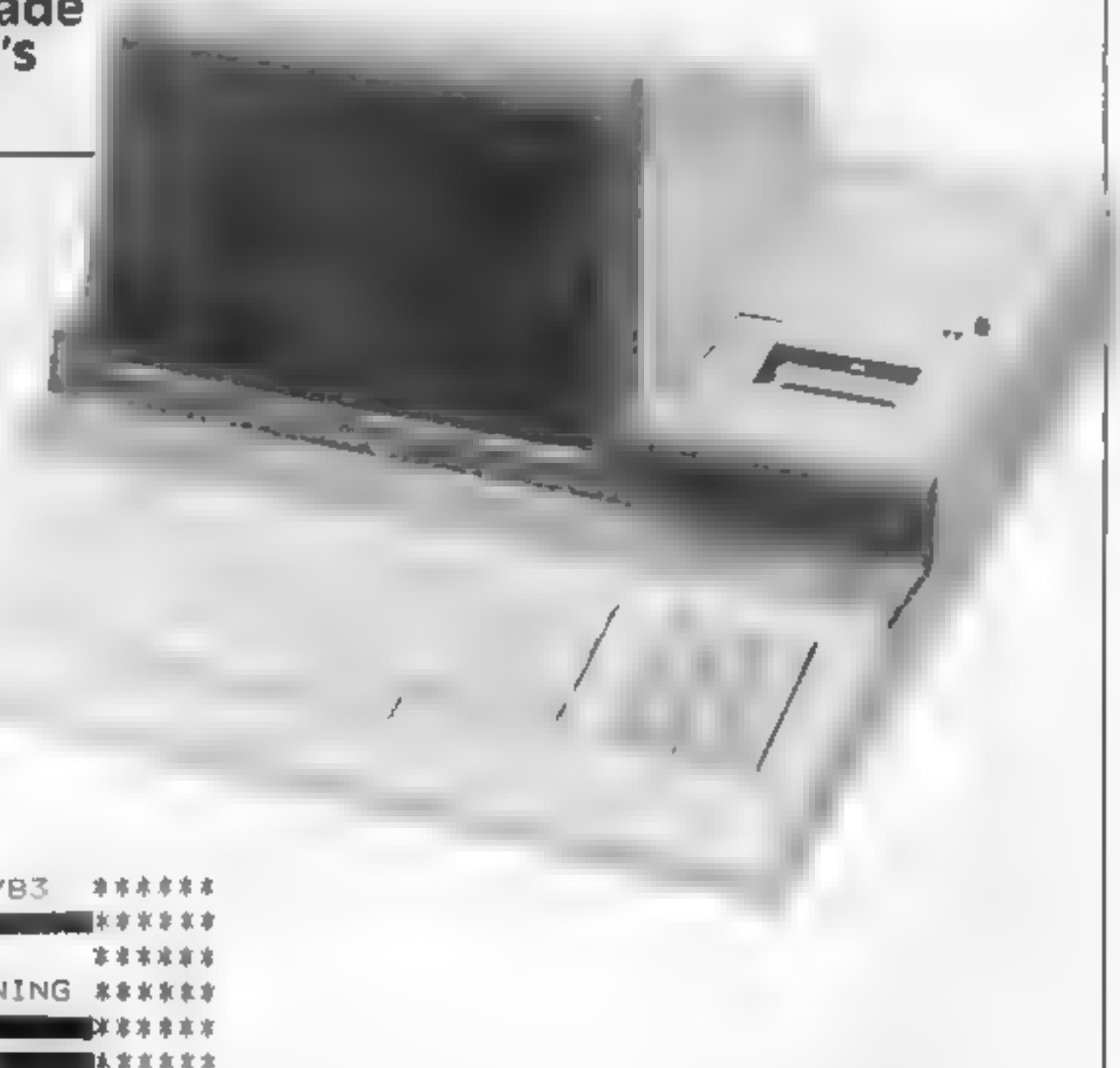
So what I did in my program was to use this super screen to set up the game before it starts, thereby saving time on working and increasing the speed. The screen working is done from line 97 to 199

The main chunk of the game is from line 200 to 299

The POKE codes are as follows, 25 is a Y, 107 is a star, 231 is a ship going right, 232 is a ship going left, 67 is a single solid block, 0 is obviously a space, 46 is d to

The lines that contain music are 113, 114, 507 and 601

As the corridor becomes narrower the game slows down slightly (variable P12) to make it easier



```
1 REM *****  MADE  5/2/83  ******
2 REM *****[redacted]******
3 REM *****       BY       ******
4 REM ***** A. GLENDINNING ******
5 REM *****[redacted]******
6 REM *****[redacted]LAUNCH[redacted]*****
7 REM
8 REM [redacted]
9 REM
15 Y=12:SHIP=3:P12=0
70 PRINT"@INSTRUCTIONS ? (Y/N)
71 GETR$:IFR$="N"THEN97
72 IFR$="Y"THEN80
73 GOTO71
80 GOSUB800
97 Y=Y-1:P12=P12+10:IFY<8THENGOTO450
98 TIM=42:DIMN(30):FORHH=1TO30:N(HH)=0:NEXT:PRINT"@":S=0:LK=0:LASER=7
99 GOSUB150:REM** LINES 100-SET SCREEN
100 A=INT(Z-(Y/2))
102 I=INT(RND(1)*4):IFI=0THEN102
```

```
105 IFI=1THENL=39
107 IFI=2THENL=40
109 IFI=3THENL=41
110 IFA+L=>55207THENGOTO170
111 A=A+L:POKEA,67:POKEA+Y,67
112 PRINT"TIME BEFORE LAUNCH:-     ";TIM;"SHIPS:-    ";SHIP:TIM=TIM-1
113 PRINT"WIDTH:-";Y:IFTIM=0THENMUSIC"+B5"
114 W2=W2+40:IF(TIM=14)+(TIM=9)+(TIM=4)THENMUSIC"+G1"
115 G=INT(RND(1)*2):GG=INT(RND(1)*2):IFGG=1THEN130
117 GOTO140
118 H=INT(RND(1)*3):IFH=0THEN118
119 IFH=1THENPOKEA+1,231:N(S)=A+1
120 IFH=2THENPOKEA+Y-1,232:N(S)=A+Y-1
125 S=S+1:GOTO149
130 F=INT(RND(1)*Y-1):IFF=0THEN130
132 F=F+A+1
134 POKEF,107
135 IF(PEEK(F)=231)THENPOKEF,231
136 IF(PEEK(F)=232)THENPOKEF,232
137 IF(PEEK(F)=67)THENPOKEF,67
140 IFG=1THEN118
149 GOTO102
150 REM** Z=ME START GAME AT 200
155 Z=53248+260:W2=53248+140
156 PRINT"[redacted]";
157 PRINT"[illegible]
160 POKEZ,25:RETURN
170 REM** PRINT FINISH
172 FORWW=55208TO55208+39:POKEWW,68:NEXT
174 POKEA+42,6:POKEA+43,9:POKEA+44,14:POKEA+45,9:POKEA+46,19:POKEA+47,8
199 Q=40
200 REM** GAME START
205 GETE$
210 IFE$="1"THENQ=39
212 IFE$="3"THENQ=41
218 IFE$="X"THENGOSUB500
219 IF(PEEK(Z+Q)<>0)THEN600
225 Z=Z+Q:POKEZ,25:POKEZ-Q,0:Q=40
227 IFZ<54507THENPRINTCHR$(4)
228 IFZ>53248+1459THEN400
230 IFZ=>N(LK)THENLK=LK+1
232 IF(PEEK(N(LK))=231)*(PEEK(N(LK))+1<>67)THEN235
233 IF(PEEK(N(LK))=232)*(PEEK(N(LK))-1<>67)THEN238
235 N(LK)=N(LK)+1:POKEN(LK),231:POKEN(LK)-1,0:GOTO245
238 N(LK)=N(LK)-1:POKEN(LK),232:POKEN(LK)+1,0
245 REM** PICK RANDOM ONE TO MOVE
246 IF(LK<2)+(LK>=S)THEN299
248 MM=INT(RND(1)*5)+LK-1
250 JK=PEEK(N(MM)):IFJK=231THEN253
251 IFJK=232THEN255
252 GOTO299
253 N(MM)=N(MM)+1:POKEN(MM),231:POKEN(MM)-1,0:GOTO299
255 N(MM)=N(MM)-1:POKEN(MM),232:POKEN(MM)+1,0
260 REM
299 FORPP=1TOP12:NEXT:GOTO200
400 REM** LAUNCH FINISHED-WITHOUT LOSS
410 PRINT"WELL DONE
415 PRINT"YOU NOW GO ONTO A SMALLER WIDTH
420 PRINT"YOU HAVE ";SHIP;" SHIPS LEFT"
425 PRINT"press space to continue
426 GETR$:IFR$=" "THENGOTO97
427 GOTO426
450 REM** TOTAL SUCCESS
452 PRINT"YES - YOU DID IT !!!!!
454 PRINT"YOU HAD ";SHIP;" SHIPS LEFT
456 PRINT"DO YOU WANT ANOTHER GAME ? (Y/N)
457 GETR$:IFR$="Y"THENRUN
```

SHARP MZ-80A PROGRAM

```
458 IFF$="N"THENEND
459 GOTO457
500 REM** ME FIRE
502 IFLASER<1THENRETURN
505 J=Z
507 FORF1=1TO50STEP5:POKE4514,F1:USR(68):NEXT:USR(71)
510 FORCC J+40TOJ+200STEP40
512 IFPEEK(CC+40)=67THENRETURN
515 POKECC,46:POKECC-40,0
560 NEXT:POKECC-40,0
570 USR(71):LASER=LASER-1:RETURN
600 REM** CRASH:POKEZ+Q,25:PRINT"■
601 FORI1=1TO70:I2=INT(RND(1)*255):POKE4514,I2:USR(68)
602 X1=X1+1
603 IFX1<25THENPRINTTAB(X1);"ROOM"
604 A1=INT(RND(1)*79):A2=INT(RND(1)*49):SETA1,A2:NEXTI1:USR(71)
605 SHIP=SHIP-1:X1=1
606 IFSHIP<1THEN650
610 PRINT"■YOU'VE LOST A SHIP !!
613 PRINT"■You have "SHIP" ships left .
615 PRINT"■■■■■■press the space bar for next launch.
616 GETR$:IFR$=" "THEN98
617 GOTO616
650 REM** END OF GAME
652 PRINT"■END OF GAME
654 PRINT"■YOU'RE LAST ATTEMPT WAS ON A WIDTH OF";Y
656 PRINT"■■■■■■■ANOTHER GAME (Y/N)
657 GETR$:IFR$="N"THENCLR:END
658 IFR$="Y"THENRUN
659 GOTO657
800 REM** RULES
810 PRINT"■                    LAUNCH
820 PRINT"■■You have the task of flying thruogh a ■ test launcher.
827 PRINT"■■The keys are : ■■1 move left":PRINTTAB(16);"■■7 move right
824 PRINTTAB(16);"■■X to fire
826 PRINT"■You only have 7 laser-bolts to fire on  ■each launch .
870 PRINT"■YOUR SHIP - Y
871 PRINT"EDGE OF TEST AREA - ■
832 PRINT"CRASH SHIPS - ":POKE54062,211:POKE54064,232
834 PRINT"ASTEROIDS - ":POKE54100,107
870 PRINT"■press the space bar to cont.
872 GETW$:IFW$=" "THENB85
873 GOTO872
885 PRINT"■■ You will have a count of 40 in which':PRINT"to ready yourself.■
887 PRINT" It is advisable for you to have your
889 PRINT"hands on the correct keys.■
891 PRINT" Upon the game starting you will move
893 PRINT"down the screen fairly fast.
895 PRINT"■ The crash ships will move out towards  you.You must avoid these.
897 PRINT"■ You  can  shoot the asteroids but the  crash  ships may continue";
899 PRINT"  across  the  screen.
901 PRINT"■ Eventually the screen will stop moving and you will see a row of";
903 PRINT"  diamonds (♦) and the word   FINISH   it is vital you have ";
905 PRINT"one laser bolt left to fire throughany  part of this word.
906 PRINT"■■■ PRESS THE SPACE BAR TO CONTINUE ■■■
907 GETR$:IFR$=' "THEN911
908 GOTO907
911 PRINT"■■ So count you're laser bolts carefully  you only have 7.
913 PRINT"■ As you complete each launch the width  will become smaller.
915 PRINT"■■■GOOD LUCK AND HAPPY FLYING !!!!
916 PRINT"■■■■■■■press the space bar to continue
917 GETR$:IFR$=" "THENRETURN
918 GOTO917
```

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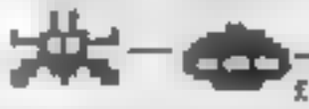

FROGGER (32K) — £7.95 Cassette £11.95 Disc
Not just another version of Frogger — this is the proper high-quality version that you've been waiting for. Graphically brilliant with gaping-mouthed crocodiles diving turtles and frogs that flex their legs as they jump along. Increasing difficulty [illegible] responsive controls, sound effects, flies and bonus frogs.

ROAD RUNNER (32K) — £7.95 Cassette/£11.95 Disc
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GALAXIANS (32K) — £7.95 Cassette/£11.95 Disc
Fast action version of the popular arcade game. 4 types of Galaxian in 3 different screen formations, swoop down individually or in groups of two. Three skill levels, hi-score rankings, bonus laser bases, increasing difficulty, superb graphics and sound.

CENTIPEDE (32K) — £7.95 Cassette/£11.95 Disc
Incredible arcade type game featuring mushrooms, flea, snails, spiders and the centipedes of course. Excellent graphics and sound, 8 skill levels, hi-score, extra lives, bonuses, and increasing difficulty as the spiders become more active and the mushrooms increase.

FRUIT MACHINE (32K) — £7.95 Cassette/£11.95 Disc
Probably the best fruit machine implementation on the markets. This program has it all — HOLD NUDGE GAMBLE, moving reels, realistic fruits and sound effects, multiple winning lines. This is THE fruit machine program to buy.

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Based upon the arcade game of ZYGON, but our version improves upon the original arcade game itself. You have to shoot the aliens out of their "boxes" before the boxes "fill up. Once full, the aliens fly down relentlessly exploding as they hit the ground. Suitable for use with keyboard or joystick.

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Superior version of the old classic arcade game including a few extras. 48 marching invaders drop bombs that erode your defences, and 2 types of spaceship fly over releasing large bombs that penetrate through your defences. Hi-score, increasing difficulty, superb sound effects and graphics.

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Helpful hints for your micro

Take a tip from us, and make programming your micro easier. Why not share your tips, too? Just send them to the address on page 3

Make space for characters
TI-99/4A

Here's a useful tip for all TI-99/4A owners. In TI BASIC, four rows of characters are allowed for each program line

You'll often find that this isn't enough, especially when using the PRINT statement. It's very frustrating to type in a line only to find you have run out of space with just one or two characters to go

Try my solution to your space problems. If you enter the unfinished line and then edit it, you'll find you can add an extra row and a half of characters on to the end of the program line

A. Platt

Steady that tremble
Oric-1

Oric users who have a problem with screen tremble may find that entering the following statement either directly or within a program improves matters

PRINT CHR$(27);"X"

James Weaver

Defining characters
Spectrum

Most home computers have a set number of characters that can be defined by the user

This is usually done by drawing the character on an eight by eight grid. Each "on" pixel is then represented by a one, and each "off" pixel by a zero. Each row of the grid is then represented by a single binary number, so that eight binary numbers define the whole grid

On the Spectrum these binary numbers are entered using the BIN command, a very untidy and tedious method. Other machines simply require the decimal value

This routine allows each row to be entered in binary, and outputs the equivalent decimal value. It could be altered to draw the graphic character as the numbers are entered, and to POKE the values directly in

```
1000 REM BINARY TO
     DECIMAL CONVERTER
1010 INPUT "INPUT BINARY
     NUMBER"; B$
1020 IF LEN B$ 8 THEN GOTO
     1010
1030 IF B$ = "0" THEN STOP
1040 LET Z = 0 : LET D = 0
1050 FOR C = LEN B$ TO 1
     STEP -1
1060 IF B$(C) = "1" THEN LET
     D = D + (2^Z)
1070 LET Z = Z + 1 : NEXT
1075 NEXT C
1080 PRINT "BINARY ", B$
     "DECIMAL"; D
1090 GOTO 1010
```

Variables used

B$ — Binary number entered as a string
Z — count of value of each heading (2^Z)
D — decimal value of binary number
C — Loop starting at end of string (2^Z) and ending at start of string (2^1)

Robert Walker

Tidy up your listings
ZX81

This short program will renumber untidy listings. To use it, just add it on to the end of your program, and enter as a direct command GOTO 9000

The program will print to the screen the new line numbers as it develops them. When the line number on the screen equals the number of program lines, press BREAK and delete the listing. This leaves your program intact with line numbers in multiples of 10

If you have machine code stored in a REM line, then the value of Y in line 20 will have to be adjusted accordingly. To do this, just add the number of bytes in the REM plus 4 to Y

```
9000 LET X = 0
9010 POKE 16510,X
9020 LET Y = 16511
9030 IF PEEK Y = 118
     THEN GOSUB 9060
9040 LET Y = Y + 1
9050 GOTO 9030
9060 LET X = X + 10
9070 PRINT X
9080 POKE Y + 2,X
9090 RETURN
```

D S. Holden

Fix static
Any micro

Trouble loading or saving programs is often put down to incorrect volume setting or a fault on your tapes. Similarly, a sudden program crash or lock-up is often put down to a spike in the mains supply. In fact, the problem is often due to static electricity

A human being can discharge an energy spark of up to 15kV and sometimes even more, so it's not surprising that many micro manufacturers are looking at ways of guarding against static

But if your micro has not been built with anti-static protection, don't despair. The following measures will help matters a lot

Try using your micro on a wooden topped table — never a metal or bonded table top

Keep your micro away from nylon, whether in the form of shirt sleeves, carpets etc. Nylon is a great storer of static

Dry atmospheres encourage static. If you have flowers and pot plants in the room where you use your micro — so much the better

Richard Smith

Stop your stop key
VIC-20

The usual way of disabling the VIC's stop key is to POKE a value of 194 into location 788, which points to the hardware interrupt vector. This method works perfectly on an unexpanded VIC

But if you have a cartridge such as the Super Expander plugged in, then this POKE will hang the machine

My program gets around this problem by directing the stop key testing pointer to a user defined routine which will not test for this key

Once entered as part of your program, the stop key is disabled and can be pressed like the function keys. That is, it has a CHR$ code (in this case it is 3), but no function

As the routine which tests for the stop key is now disabled, you cannot press Stop/Restore to reset the system

```
10 POKE 0,169: POKE 1,255
POKE 2,96
20 DATA 169,0,141,40,3,141,
41,3,96
30 FOR I = 900 TO 908: READ J:
POKE I,J: NEXT
40 SYS 900
50 REM ****YOUR PRO-
GRAM****
```

Kevin Irving

Print out a TRACE
Spectrum

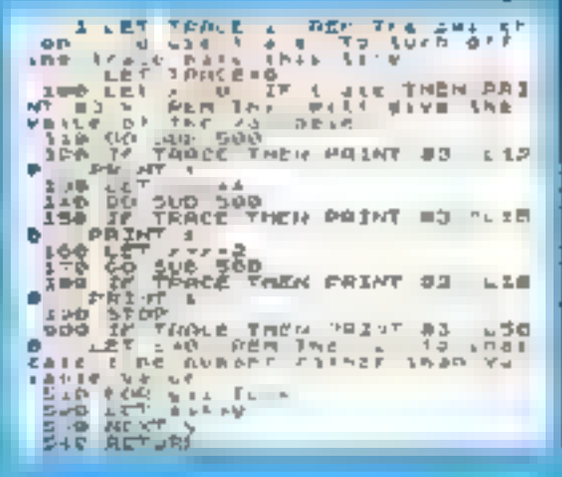
The Spectrum needs a TRACE command to print program line numbers, variables etc as each one is executed by the computer. This is a useful aid to debugging

My tip makes use of the printer to print out TRACE information — I find that printing the same information on screen leads to confusion

By setting a "switch" at the start of the program, you can turn the TRACE on and off

The following listing shows the system applied to the program on p 38 of the Spectrum manual

L. V. Phillips



Call your micro to account

Personal Bank Account Management System 48K Spectrum £9.95

Micromega, 230-236 Lavender Hill, London SW11 1LE

Do you wonder where your money goes? These programs are intended to help you find out. Our review panel found some did the job better than others . . .

Nicely packaged and presented, this product comes with an excellent 17-page user's guide which clearly explains how the system works.

On loading the tape you find that the files already contain a fictitious account in the name of some chap called Clive Sinclair. I can't help feeling they missed a few zeros off the final balance It's helpful to play with the example entries to get a feel for the operation prior to entering your own data

The system holds 160 transactions and up to 10 standing orders, and this, for me, would comfortably hold a complete annual bank statement

The operation is handled through a menu and is both simple to use and virtually impossible to crash

It also has facilities which allow searching the data files by cheque number, details, etc. and reconciling the computer entries with your actual bank statement

The reconciliation feature reports any discrepancies between the computer's vesion and the bank's version. If you've been accurate with your data entry, you might find a bank error in your favour which recoups the original price of the software

This software is professionally written and bug free and will appeal to users wanting to apply their micros to do a real job of work. **M.B.**

instructions	90%
useability	90%
features	90%
value for money	90%

★ ★ ★ ★ ★

Home Budget 48K Spectrum £5.75

Flowchart 62, High Street, Irthlingborough, Northants NN9 5TN

Home Budget enables you to set up a record of your estimated monthly expenses and income and work out your finances for the year ahead

You are allowed up to ten categories of expenditure, which will cover the main items but means that a degree of grouping is necessary in order to encompass all expenses

Having set up your forecast for the year, options include displays of monthly results, year end totals and histograms, and saving, verifying and loading to and from tape (using a six-digit security code — which seems a bit like overkill for a *personal* banking scheme)

Two very good points about this program are the facility to convert forecasts into actual expenditure, say at the end of each month, and see the 'knock-on' effects on the rest of the forecast, and the ability to 'roll' the forecast year forward at monthly or greater intervals

As personal banking systems go, this one is better than most **K.P.**

instructions	85%
ease of use	90%
display	90%
value for money	80%

★ ★ ★ ★

Mortgage & Loan

Hilderbay, 8-10 Parkway, London NW1 7AA

Mortgage is designed to calculate mortgage payments on loans from either banks or building societies

Having entered the mortgage you want and the interest rate, you then specify whether the mortgage is with a building society or not. If not, you enter the number of instalments per year.

The program will also work out the minimum instalment to pay off the interest — the repayment period theoretically lasting for ever — which is information of dubious value for the average house buyer

The Table of Payments shows outstanding balance (not total paid to date, as quoted in the introduction), total interest to date, interest this instalment, and amount paid off the capital this instalment

Personally, I would rather not be told how much interest I am paying, and the outstanding balance shows me how much has been paid off the capital. Far more useful would be the amount of tax relief and net payment

Loan is a variation on the same theme. From a list of parameters, amount of loan, instalment, number of instalments, and interest rate, the program will calculate any one on receipt of the other three. If you query the meaning of a parameter, an explanation is given

Bug trapping is minimal in both programs, which don't seem to match the high standard associated with this company **K.P.**

instructions	60%
ease of use	80%
display	50%
value for money	30%

★

Vu-Calc 48K Issue and Micro Clinic

Psion, 2 Huntsworth Mews, Gloucester Place, London NW1 6DD

Vu-calc is a powerful spreadsheet program for those who seriously want help in budgeting, either at home or in a small business

It is complex to use, though Psion has tried hard to make the user guide easy for even a newcomer to spreadsheets to follow And an example on side two of the tape gives you an insight into how to go about laying out a spreadsheet if you've never done it before — I found this a great help!

The program can be used from tape or transferred to disc, which I did without problems. A pity, though, that the, worked example can't be transferred to disc. **J.H.**

instructions	80%
ease of use	45%
display	n/a
value for money	70%

★ ★ ★ ★

Comp-U-Tax 48K Spectrum £9.95

Micromega, 230-236 Lavender Hill, London SW11 1LE

This program rather reminds me of Christmas after shave, a small cassette and manual in an impressive box. Disappointment lurked within however. Not only did the glued cassette jam, but once freed, it failed to load first time

I read the manual only to find that there were a number of circumstances it wouldn't deal with, advising the services of an accountant instead. I managed to load the program eventually and then crashed it quite by accident!

After such a catalogue of misfortune, I don't feel that I would trust it to calculate my tax liability for 1982-83. (You need a new program every time the tax laws change). **D.M.**

instructions	60%
ease of use	60%
display	n/a
value for money	20%

★

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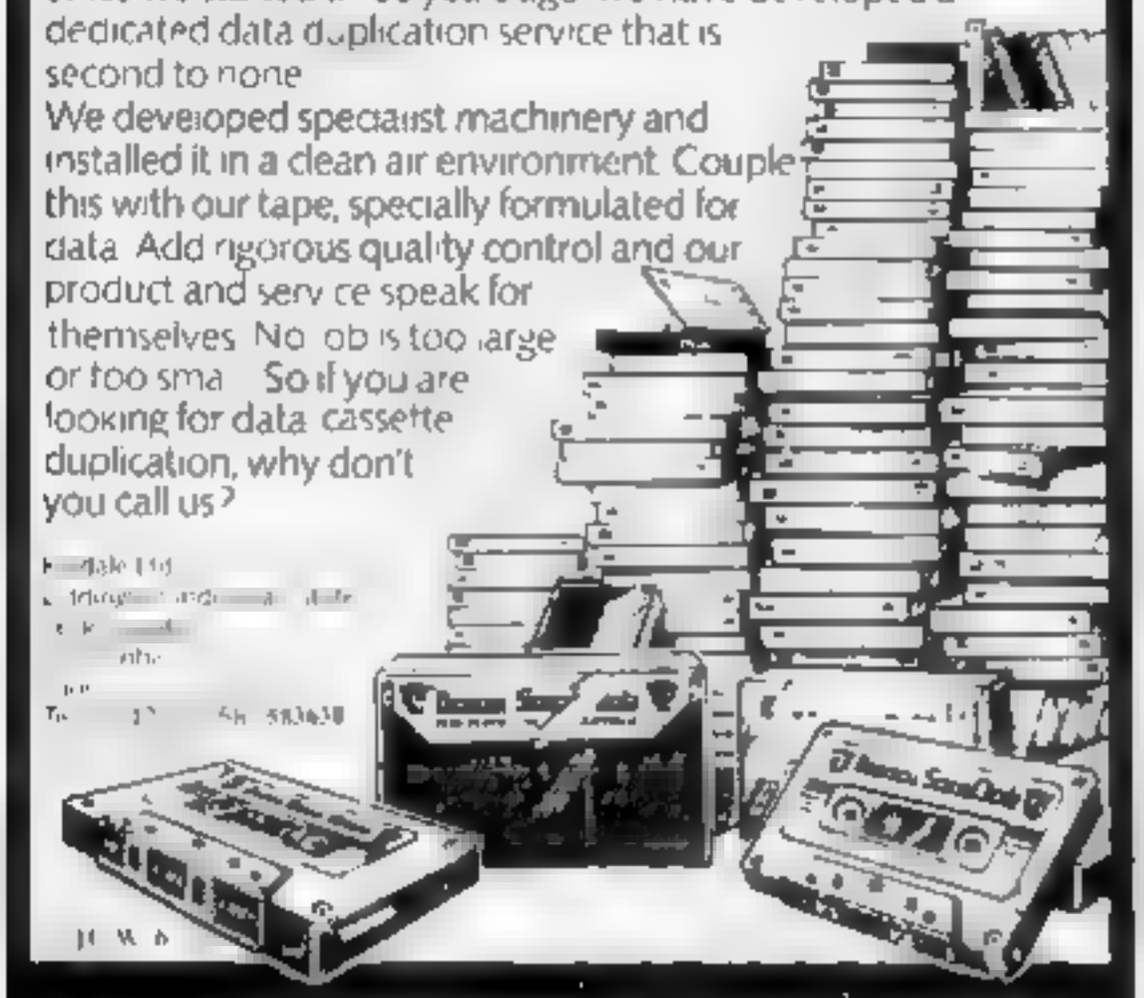

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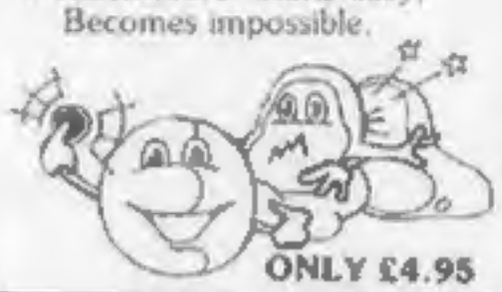

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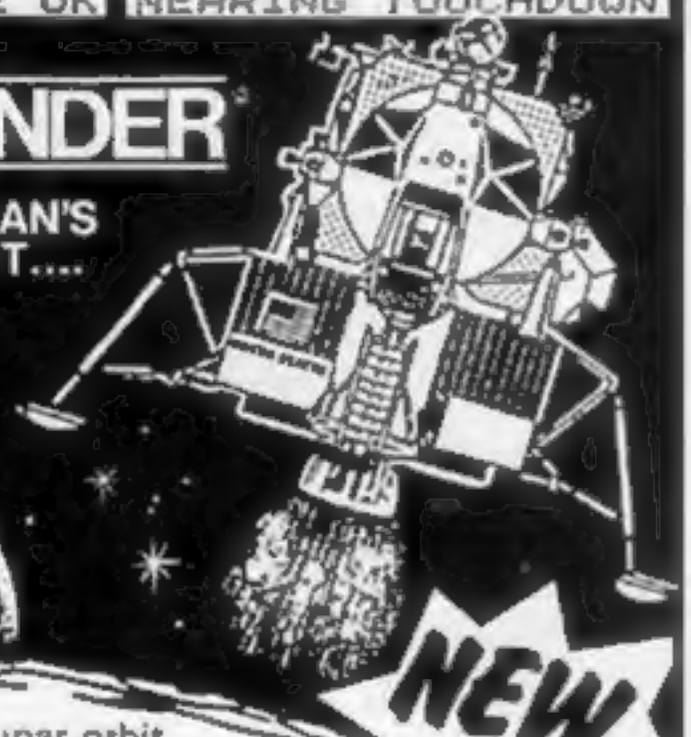

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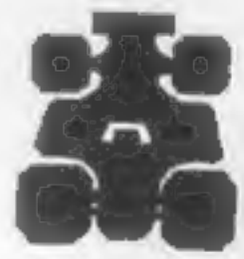

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